



HAMPDEN COUNTY REGISTRY OF DEEDS

DAMS FILE COLLECTION

BOOK D22

TOWN OF WEST SPRINGFIELD, MASSACHUSETTS



*Donald E. Ashe, Register
Hampden County Registry of Deeds,
a Division of the Office of
William Francis Galvin, Secretary of the Commonwealth*

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Allen Dam



o West Springfield

Also see: Dam Report Section - West Springfield.

City/Town	West Springfield
Dam	Allen Dam

WEST SPRINGFIELD
D22001

ALLEN DAM

D22001

NO IMAGE ON FILE FOR THIS RECORD

(INFORMATION EXISTS ONLY ON A FILE CARD FROM THE
OFFICE OF THE FORMER HAMPDEN COUNTY ENGINEER.)

American Writing Paper Company Dam



1926 West Springfield

Located on the Westfield River. See also: County Roads Plan #9 (1951) "Dam Alterations on East Side of Paper Reservoir".

City/Town	West Springfield
Dam	American Writing Paper Company Dam
Name	American Writing Paper Company
Water	Westfield River

Page 78 of report.

American Writing Paper Company,
Holyoke, Mass.

you are notified that your
upper or main dam, located on the Westfield River
so called in the Town of West Springfield etc.

"The dam is in poor condition
and requires considerable repairs if not
a new structure in whole."

March 24, 1926

American Writing Paper Company,
Holyoke, Mass.

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your upper or reservoir dam, located on the Westfield River so-called in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

"The dam is in poor condition and requires considerable repairs if not a new structure in whole."

Yours very truly,

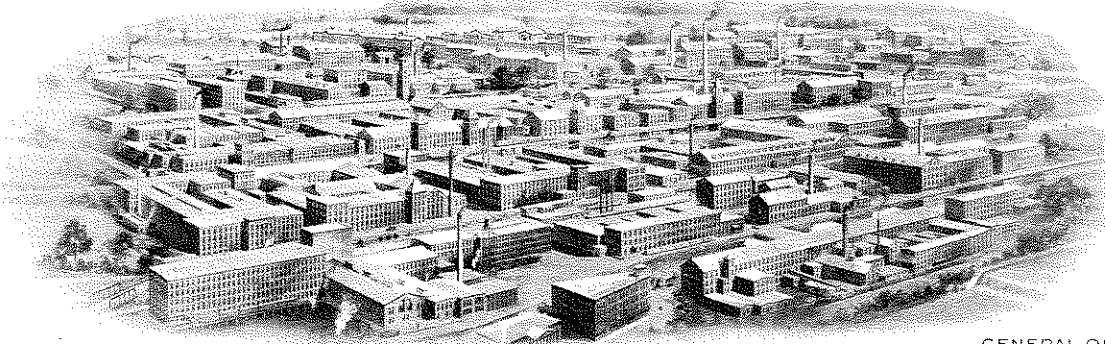
COUNTY COMMISSIONERS

By _____
Chairman



SIDNEY L. WILLSON, RECEIVER OF

AMERICAN WRITING PAPER COMPANY



26 MILLS-55 MACHINES

GENERAL OFFICES
HOLYOKE, MASS.

Jan. 28, 1926

Board of County Commissioners,
Hampden County,
Springfield, Mass.

Attention: George S. Cook , Chairman

Gentlemen:-

We would like to receive a copy of the County Commissioners report on the conditions of the Dams in Hampden County.

We understand that Mr. Tighe of Holyoke made an inspection of the Hampden County Dams this summer. If there is a charge for this report, kindly advise and we will remit at once.

Very truly yours,

Sidney L. Willson, Receiver of
AMERICAN WRITING PAPER COMPANY

By A.T. Buckhout
A.T. Buckhout, Constr. Engr.
Engineering Department

ATB:JP

February 3, 1926

A. T. Buckhout, Constr. Engr.
Engineering Department,
American Writing Paper Company,
Holyoke, Mass.

Dear Sir:

We have referred your letter of Jan. 28th
to Mr. James L. Tighe of Holyoke, the County's Engineer
who examined the dams in Hampden County, and Mr. Tighe
will call in to see you and talk the matter over.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

GSC/N

February 3, 1926

Mr. James L. Tighe,
189 High Street,
Holyoke, Mass.

Dear Mr. Tighe:

Enclosed you will find copy of a letter the Commissioners received from the Engineer of the American Writing Paper Company. Would you kindly call in sometime in the near future and talk with Mr. Buckhout, finding out just what he wants. I presume he doesn't realize the size of the report he is asking copy of.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

GSC/N
Enc.

JAMES L. TIGHE

MEMBER
AM. SOC. C. E.
INST. C. E. GREAT BRITAIN
ENG. INST. OF CANADA

CONSULTING ENGINEER
CALEDONIAN BUILDING, 189 HIGH STREET
HOLYOKE, MASS.
TELEPHONE 790

MEMBER
BOSTON SOC. C. E.
ENG. SOC. WEST. MASS.
AM. & N. E. W. W. ASSOC'S

MEMBER AM. INST. OF CONSULTING ENGINEERS, INC.

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
ANALYSIS OF WATER

February 8th, 1936.

WATER POWER INVESTIGATIONS
AND DEVELOPMENT
DAMS AND POWER INSTALLATIONS
ESTIMATES AND APPRAISALS

George S. Cook, Chairman,
Hampden County Commissioners,
Springfield, Mass.

Dear Sir:

Relative to the American Writing Paper Company obtaining a copy of report on the Hampden County dams, I have taken the matter up with Mr. Buckout, construction engineer of the company who had written for copy of report, and found that his reason for so writing was because he thought the report was printed and copies on file. He said he would not expect a copy otherwise.

I explained the length of report to him and since I have a copy of it here in the office, I said it was at his service any time to read over. This was perfectly satisfactory to him, as his only interest in it, outside of the American Writing Paper Company dams, was to have a copy of the report if it were in print and copies for distribution.

Respectfully,

James L. Tighe

Bear Hole Dam

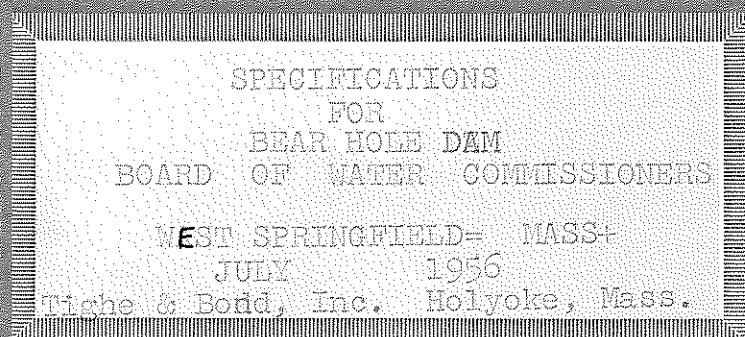


1956 West Springfield

Also see: Dam Report Section - West Springfield. See also: County Highways (West Springfield) - "Bear Hole Brook Earth Dam - Pesce Brothers" - ch05080 and "Bear Hole Dam" - ch07100..

City/Town	West Springfield
Dam	Bear Hole Dam
Water	Bear Hole Reservoir

d25 095



Filed - July 10, 1956

Hampden County Commis' Office.

See "Special Provisions"
(Blue sheet) - between sheets 31 and 32
for County Commissioners'
Approval.

BOARD OF WATER COMMISSIONERS
TOWN OF WEST SPRINGFIELD, MASS.

* * * * *

ADVERTISEMENT FOR BIDDERS

Sealed proposals addressed to the Board of Water Commissioners, Town Hall, West Springfield, Mass., and endorsed "Proposal for Bear Hole Dam", will be received by the Board of Water Commissioners at their office until 9:00 P.M. (D.S.T.) Monday, July 16, 1956, and at that time and place publicly opened and read aloud. Proposal Guaranty: From General Contractors, \$7,500.00. Complete information and proposal forms may be secured at the office of Tighe & Bond, Pequot & Bowers Streets, Holyoke, Mass. Charge for plans and proposal forms, \$20.00; amount allowable to bidders who return plans in seven (7) days after opening of bids. Minimum wage rates have been established. Performance and Payment Bond in the full amount of the contract will be required by the Town from the General Contractor. Right reserved to waive any informality in and reject any or all proposals or accept proposal deemed most satisfactory to owner, if it be in the public interest so to do. No proposal may be withdrawn within thirty (30) days after actual date of opening thereof.

BOARD OF WATER COMMISSIONERS
TOWN OF WEST SPRINGFIELD, MASS.

**PROPOSAL
FORM**



**TIGHE & BOND
CONSULTING ENGINEERS
HOLYOKE, MASS.**

BOARD OF WATER COMMISSIONERS
TOWN OF WEST SPRINGFIELD, MASS.

* * * * *

PROPOSAL

For the furnishing of all materials and the doing of all work as herein described, required for or necessary to the construction of the concrete spillway and earthen dam on Paucatuck Brook at the Bear Hole Water Supply Facility in the Town of West Springfield, Mass.

To the Board of Water Commissioners
Town of West Springfield, Mass.

The undersigned as bidder, declares that the only persons or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm or corporation; that he has carefully examined the location of the proposed work, has taken into full consideration all difficulties likely to be met with in doing of the work; that he has also carefully examined the proposed specifications and plans therein referred to; and he proposes and agrees, if this proposal is accepted, that he will contract with the Board of Water Commissioners, Town of West Springfield, Mass., in the form of Contract annexed, to provide all necessary machinery, tools, apparatus, materials, labor and other means of construction, and to do all the work and to furnish all the materials specified in the Contract, in the manner and time herein prescribed, and according to the requirements of the Engineer as herein set forth, and that he will take in payment therefor the following sum or sums, to wit:

ITEM APPROX. No.	QUANTITY	DESCRIPTION WITH UNIT WITTEN IN WORDS AND FIGURES	BID PRICE	AMOUNT OF ITEMS DOLLARS CENTS
1	lump sum	For the miscellaneous work of preparing the construction site, control of water and cleaning up after the completion of construction, including all labor, equipment and materials required for or incidental to the item as herein described, the sum of:		
			(\$ _____)	\$ _____

ITEM NO.	APPROX. QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS AND FIGURES	AMOUNT OF ITEMS DOLLARS CENTS
2	0.25 acres	For clearing and grubbing the dam site and borrow pit areas as herein described, including all labor, equipment and materials required for or incidental to the item, the sum of:	
		_____ (\$)	\$ _____
3	8500 cu. yds.	For each cubic yard of earth excavation as hereinafter described, including all labor, equipment and materials required for or incidental to the item, the sum of:	
		_____ (\$)	\$ _____
4	100 cu. yds.	For each cubic yard of rock excavation as hereinafter described, including all labor, equipment and materials required for or incidental to the item, the sum of:	
		_____ (\$)	\$ _____
5	1100 cu. yds.	For each cubic yard of 3,000 psi concrete furnished in place in the completed work as hereinafter described, including all labor, equipment and materials, required for or incidental to the item, the sum of:	
		_____ (\$)	\$ _____
6	400 cu. yds.	In addition to payment under Item 5, for each cubic yard to which is added an integral waterproofing admixture as directed by the Engineer and as herein specified, including all labor, equipment and materials required for or incidental to the item, the sum of:	
		_____ (\$)	\$ _____

ITEM NO.	APPROX. QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS AND FIGURES	AMOUNT OF ITEMS	
			DOLLARS	CENTS
7	10 cu. yds.	For each cubic yard of insulating concrete furnished in place in the completed work as hereinafter described, including all labor, equipment and materials required for or incidental to the item, the sum of:		
		_____	\$	
		(\$)		
8	90 tons	For each ton of reinforcing steel bars or mesh furnished in place in accordance with the specifications, including all labor, equipment and materials required for or incidental to the item, the sum of:		
		_____	\$	
		(\$)		
9	2000 Bd. Ft.	For each board foot of structural lumber furnished in place in the completed work as hereinafter described, including all fastening devices and labor, equipment and material required for or incidental to the item, the sum of:		
		_____	\$	
		(\$)		
10	130 lin. ft.	For each linear foot of piperailing furnished in place in the completed work as hereinafter described or as ordered by the Engineer, including all labor, equipment and materials required for or incidental to the item, the sum of:		
		_____	\$	
		(\$)		
11	lump sum	For the installation of the water control equipment in the screen well and for other work as hereinafter described, including all labor, equipment and materials required for or incidental to the work, the sum of:		
		_____	\$	
		(\$)		

ITEM NO.	APPROX. QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS AND FIGURES	AMOUNT OF ITEMS DOLLARS CENTS
12	365 lin. Ft.	For each linear foot of 24" Lock Joint Pipe, furnished by the Owner and laid by the Contractor, including all labor, equipment and materials required for or incidental to the item as here- inafter described, the sum of:	<div>\$</div> <div>(\$)</div>
13	200 lin. Ft.	For each linear foot of 8" vitrified clay, extra-strength, perforated underdrainage pipe, furnished and placed by the Contractor, including all labor, equipment and materials required for or incidental to the item, the sum of:	<div>\$</div> <div>(\$)</div>
14	3000 cu. yds.	For each cubic yard of gravel borrow furnished in place by the Contractor as hereinafter described, including all labor, equipment and materials required for or incidental to the item, the sum of:	<div>\$</div> <div>(\$)</div>
15	40 tons	For each ton of filter stone bor- row furnished in place in the com- pleted work, as hereinafter des- cribed, including all labor, equipment and materials required for or incidental to the item, the sum of:	<div>\$</div> <div>(\$)</div>
16	1500 tons	For each ton of trap rock furnished as riprap in accordance with the specifications, including all labor, equipment and materials, required for or incidental to the work, the sum of:	<div>\$</div> <div>(\$)</div>

ITEM NO.	APPROX. QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS AND FIGURES	AMOUNT OF ITEMS DOLLARS CENTS
17	1200 lbs.	For each pound of cast iron furnished in place in accordance with the specifications, including all labor, equipment and materials required for or incidental to the item, the sum of:	\$ _____
		(\$ _____)	
18	100 lbs.	For each pound of aluminum furnished in place in accordance with the specifications, including all labor, equipment and materials, required for or incidental to the work, the sum of:	\$ _____
		(\$ _____)	
19	1600 cu. yds.	For each cubic yard of <u>select pervious</u> fill obtained from local borrow pits as hereinafter described, including all labor, equipment and materials required for or incidental to the excavation, hauling and placing in the completed work of this fill, the sum of:	\$ _____
		(\$ _____)	
20	cu. yds.	For each cubic yard of <u>random pervious</u> fill obtained from local borrow pits as hereinafter described, including all labor, equipment and materials required for or incidental to the excavation, hauling and placing in the completed work of this fill, the sum of:	\$ _____
		(\$ _____)	
21	6000 cu. yds.	For each cubic yard of <u>semi-pervious</u> fill obtained from local borrow pits as hereinafter described, including all labor, equipment and materials required for or incidental to the excavation, hauling and placing in the completed work of this fill, the sum of:	\$ _____
		(\$ _____)	

ITEM NO.	APPROX. QUANTITY	DESCRIPTION WITH UNIT BID PRICE WRITTEN IN WORDS AND FIGURES	AMOUNT OF ITEMS DOLLARS CENTS
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22 3500
cu. yds. For each cubic yard of Impervious fill obtained from local borrow pits as hereinafter described, including all labor, equipment and materials required for or incidental to the excavation, hauling and placing in the completed work of this fill, the sum of:

\$ _____
(\$)

23 5000
sq. yds. For each square yard of loaming, fine grading, fertilizing and seeding as hereinafter described including all labor, equipment and materials required for or incidental to the item, the sum of:

\$ _____
(\$)

TOTAL AMOUNT OF BID

Items 1 - 23 Inclusive \$ _____

The work under this contract will be substantially completed and the pipeline, having passed the required leakage tests, placed in operation within

() calendar days from the date of signing of the Contract.

The hereinabove and hereinbefore listed prices are to include and cover the furnishing of all materials, the performing of all labor, requisite or proper, and providing of all necessary machinery, tools, apparatus and other means of construction, and the doing of all the above-mentioned work in the manner set forth, described and shown in the specifications and in the drawings for the work, and in the form of Contract.

If this proposal shall be accepted and the undersigned shall fail to contract as aforesaid and to give a bond in the sum to be determined as aforesaid with a surety satisfactory to the Owner, within ten (10) days (not including Sunday) from the date of mailing of a notice from the Owner to him, according to the

address herewith given, that the contract is ready for signature the Owner may, at its option, determine that the bidder has abandoned the contract, and thereupon this proposal and its acceptance thereof shall be null and void; and the proposal guaranty submitted, covering this proposal, shall become the property of the Town of West Springfield; otherwise the said proposal guaranty shall be returned to the undersigned.

SIGNATURE OF BIDDER: _____

BUSINESS ADDRESS: {

PLACE OF RESIDENCE: {

DATE: _____

The full names and residences of all the persons and parties interested in the foregoing proposals are as follows:

*(Notice - give first and last names in full; in case of Corporations, give names of President, Treasurer and Manager, and in case of firms give the names of the individual members.)

The proposed surety Company on the bond to be given is as follows:

Name: _____

Address of Home Office: _____

Massachusetts Office: _____

GENERAL REQUIREMENTS



**TIGHE & BOND
CONSULTING ENGINEERS
HOLYOKE, MASS.**

GENERAL REQUIREMENTS

.....

DEFINITION OF TERMS

Article 1. Definition of Terms.

Wherever in these specifications of other contractual documents the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as follows:

- Addendum An addition to or alteration of the Plans and/or Specifications generally issued for clarification purposes prior to the opening of proposals.
- Advertisement ... The notice published in newspapers and trade bulletins announcing the time and place for the opening of bids for work to be done.
- A.A.S.H.O. The American Association of State Highway Officials.
- Alteration Change in the form or character of any of the work done or to be done.
- A.S.T.M. The American Society for Testing Materials.
- Bidder Any individual, firm or corporation submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.
- Contractor A party to the contract, acting directly or through an authorized lawful agent or employee.
- Engineer The Consulting Engineer acting directly or through an authorized representative, such representative acting within the scope of the particular duties entrusted to him.
- Extra Work Work or materials not called for in the Plans and Specifications and which is deemed necessary for the proper completing of the improvement.
- Layout See Right of Way.
- Location See Right of Way.
- Material Any substance proposed to be used in connection with the construction of the project and its appurtenances.
- Owner The duly authorized official or officials in charge of the project.

PROPOSAL REQUIREMENTS AND CONDITIONS

Article 2. Contents of Proposal Forms.

Proposal forms consisting of the documents listed below will be furnished by the Owner to the bidder upon request at the office of the Engineer.

- A. The Specifications; including the Advertisement, General Requirements, Special Provisions, Standard Detail Drawings, Addenda, Proposal Form and Contract Form.
- B. The Plans.

Article 3. Interpretation of Basic Estimate of Quantities.

- A. All bids will be compared on the basis of the Engineer's estimate of quantities of work to be done, as shown in the Proposal.

These quantities are approximate only, being given as a basis for the comparison of bids, and the Owner does not expressly or by implication agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class, item or portion of the work, as may be deemed necessary or expedient by the Owner.

Bidders are required to submit their estimate upon the following express conditions, which shall apply to and become part of every bid received, viz:

An increase or decrease in the quantity for any item or group of items shall not be regarded as cause for an increase or decrease in the prices, nor in the time allowed for the completion of the work, except as provided in the contract. An increase or decrease in the quantity of work to be done shall not warrant any claim for loss, damage or anticipated profit.

- B. The work has been divided into classes and items in order to enable the bidder to bid on the different portions of the work in accordance with his estimate of their cost, so that in the event of an increase or decrease in the quantities of any particular class of work the actual quantities executed may be paid for at the price bid for that particular class of work.

Article 4. Examination of Plans and the Location.

Statements as to the condition under which the work is to be performed, including plans, surveys, measurements, dimensions, calculations, estimates, borings, etc., are made solely to furnish a basis for comparison of bids, and the Owner does not guarantee or represent that they are even approximately correct. The Contractor must satisfy himself by his own investigation and research regarding all conditions affecting the work to be done and labor and material needed, and make his bid in sole reliance thereon. The Contractor should carefully examine any materials furnished

Article 6. Delivery of Proposals.

Each Proposal shall be submitted to the Owner in a sealed envelope. On the outside of the envelope shall be written the bidder's name and address and the name of the project for which the bid is submitted.

If forwarded by mail, the sealed envelope containing the Proposal, and marked as directed above, must be enclosed in another envelope addressed to the Owner. The recommended method of mailing shall be "Registered-Return Receipt Requested."

Proposals received by the Owner at the designated place after the time designated in the Advertisement for Bidders will be returned to the bidder unopened.

It is the bidder's responsibility to see that his Proposal is at the designated place at the designated time. The Owner will not receive any Proposal not delivered to the designated place.

Article 7. Proposal Guaranty Required.

In order to insure the faithful fulfillment of its terms, each Proposal shall be accompanied by a certified check or lawful money as directed in the Special Provisions. Said check will be returned to the bidder unless retained by the Owner under the conditions hereinafter stipulated.

A bid bond will not be accepted as security.

Article 8. Public Opening of Proposals.

Proposals will be publicly opened and read aloud at the time and place indicated in the Advertisement for Bidders. Bidders or their authorized agents are invited to be present.

Article 9. Rejection of Proposals.

Proposals which fail to meet the requirements of Articles 5, 6 and 7, or which are incomplete, conditional or obscure, or which contain additions not called for, erasures, alterations or irregularities of any kind, or in which errors occur, or which contain abnormally high or abnormally low bid prices for any class of item of work, may be rejected as informal. The Owner may waive any informalities in or reject any or all bids and may accept any bid the Owner deems to be in his best interests or in the best interests of the group represented by the Owner.

More than one proposal from the same bidder, whether or not the same or different names appear on the signature page, will not be considered. Reasonable proof for believing that any bidder is so interested in more than one proposal for the work contemplated will cause the rejection of all proposals made by him directly or indirectly. Any or all proposals will be rejected if there is reason for believing that collusion exists among the bidders.

AWARD AND EXECUTION OF THE CONTRACT

Article 14. Consideration of Bids.

The Owner reserves the right to reject any or all proposals, to waive technicalities, and to advertise for new proposals, or proceed to do the work otherwise, as it may deem best for its own interests.

Article 15. Award of Contract.

The bids will be compared on the basis of the totals of the sums obtained by multiplying the Engineer's estimate of quantities by the unit price stated on the Proposal for each respective item.

The lowest bidders will be determined as described in the above paragraph. The responsible bidders will be determined as described in Articles 9, 11 and 12.

The Contract will be awarded to the lowest, responsible bidder as determined by the Owner.

The Contract will be awarded by the Owner as soon as practicable after the opening of bids. The successful bidder will be notified in writing, by mail, or otherwise, that his bid has been accepted and that he has been awarded the contract.

Article 16. Return of Proposal Guaranty.

The Proposal Guaranty will be returned to all except the three lowest formal bidders within three days after the opening of the bids. The Proposal Guaranty of each of the three lowest formal bidders will not be released by the Owner until after a Contract has been executed. Within three days after the signing of a Contract, the Proposal Guaranty of each of the three low bidders will be returned except as hereinafter provided.

The Proposal Guaranty submitted with any bid rejected as informal will be returned within three days of said rejection.

Article 17. Contract Bond Required.

Prior to the execution of the Contract, the Contractor will be required to furnish a surety bond in the amount specified in the Special Provisions as security for faithful performance of this Contract. The bond shall also guarantee payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract.

The bond must be in the usual and approved form and must also contain the following: "and shall pay for all labor performed or furnished and for all materials used or employed, and shall pay all persons who contract with the principal for labor and materials as provided in the

considered a part of the contract. In case of conflict between the said Special Provisions and General Requirements, the Special Provisions shall govern.

Article 22. Alteration of Work.

Should it be found desirable by the Engineer to make alterations in the form or character of any of the work done, or to be done, the Engineer may order such alterations to be made, defining them in writing, supplemented with drawings when in the opinion of the Engineer it is necessary, and the alterations shall be made accordingly; provided that in case such alterations increase the cost of the work the Contractor shall be remunerated at prices based on prices allowed on the same character of work under the specifications, and in case the alterations shall diminish the cost of the work no allowance will be made for anticipated profits.

In case of any alteration, change or addition to the work as originally contemplated, and if said alteration, change or addition justified an increase in the cost of the work, the Owner reserves the right to decide the method that will be used to determine said additional costs. (see Article 73.)

In case of any alterations, so much of the contract as is not necessarily affected by such alterations shall remain in force upon the parties thereto, and such alterations shall be made under the terms of and as a part of the contract, and the security for the performance of the contract shall in nowise be invalidated, but shall be held to secure in like manner the performance of the alterations made under the contract and of any extra work done under the provisions of Article 23.

The Contractor shall perform the work as increased or decreased within the qualifying limits named and subject to the provisions outlined above, but no allowance shall be made for any change in anticipated profits. Adjustments shall be considered waived unless specific complaint is made in writing by the Contractor previous to the construction of such alteration or change and within three calendar days following notice from the Owner of such alteration or change.

Article 23. Extra Work.

The Contractor shall do any work not herein otherwise provided for, when and as ordered in writing by the Engineer, such written order to contain particular reference to this article.

If the Contractor claims that any instructions from the Engineer involve extra cost or an extension of time, he shall so notify the Engineer in writing within three calendar days after the receipt of the Engineer's instructions and in any event before proceeding to execute the extra work. No claim from the Contractor will be considered valid unless made in accordance with the terms of this Article.

Such notice by the Contractor and the keeping of costs by the Engineer shall not in any way be construed as proving the validity of the claim.

Nothing in the contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the work or the soil; but all such materials shall, upon being so attached or affixed, become the property of the Owner.

Article 27. Final Cleaning Up.

Upon completion of the work and before acceptance and final payment, the Contractor shall remove, at his own expense, from the project location and from adjoining property, all temporary structures and all surplus material and rubbish which may have accumulated during the prosecution of the work, and shall leave the work broom clean and in a neat and orderly condition. The Contractor shall clean up the job so that the condition of the site will be at least equal to its condition before work began.

No equipment or materials shall be left on the right-of-way or project limits without the written permission of the Engineers.

CONTROL OF WORK

Article 28. Authority of the Engineer.

The Engineer shall decide all questions which may arise as to the quantity, quality, acceptability, fitness and rate of progress of the several kinds of work to be performed and materials to be furnished under the contract, and shall decide all questions which may arise as to the interpretation of any part of the contract, especially the plans and specifications which are a part thereof, as to the fulfillment of this contract on the part of the Contractor, and the determination and decision of the Engineer shall be final and conclusive; and such determination and decision, in case any question shall arise, shall be a condition precedent to the right of the Contractor to receive any money hereunder.

Article 29. Plans and Detail Drawings.

Approved plans, profiles and sections on file in the office of the Engineer will show the location, details and dimensions of the work contemplated, and all work shall be in strict conformity therewith and with the specifications.

Supplemental plans and detail drawings as required in the specifications and furnished by the Contractor shall upon approval become a part of the complete plans. Such approval of supplemental plans or detail drawings, however, shall not be construed as a complete check and shall not operate to relieve the Contractor of any of his responsibility under the contract for the satisfactory completion of the work, nor for the accuracy of the dimensions, details or quantities or for their agreement.

When submitting detail drawings for approval, complete sets of prints as directed shall be furnished the Engineer who will return one set either approved or with corrections marked thereon. Finally, the Contractor shall

or result from said work of public service corporations or municipal departments.

Article 33. Adjacent Contracts.

The Contractor shall carry on his work concurrently with that being done on other contracts or work (if any) adjacent to or in conjunction with the project, so as to provide for all possible cooperation towards the satisfactory completion of the work with a minimum of delay and inconvenience. Where necessary and insofar as possible he shall permit other contractors free and unobstructed passage over the work. He shall have no claim for or on account of any damage or delay due to the operations of other contractors or their movements over his section of the work.

Article 34. Construction Stakes.

The Contractor shall furnish, free of charge, all stakes and such temporary structures as may be necessary for marking and maintaining points and lines given by the Engineer for the building of the work, and shall give the said Engineer such facilities and materials for giving said lines and points as he may require; and the Engineer's marks shall be carefully preserved.

Article 35. Authority and Duties of Engineer's Assistants.

The Engineer may appoint such assistants and representatives as he desires and they shall be authorized to inspect work and materials, to give directions pertaining to the work or to the safety and convenience of the public, to approve or reject materials, to make measurements of quantities and to perform such other duties as may be designated by the Engineer.

In case of any dispute arising between the Contractor and the Engineer's assistants, as to materials furnished or the manner of performing the work, the Engineer's assistants shall have the authority to reject the materials or to suspend the work until the question at issue can be referred to and decided by the Engineer.

Engineer's assistants are not authorized to revoke, alter, enlarge, relax or release any requirements of these specifications, nor to issue instructions contrary to the plans and specifications. They shall in no case act as foreman or perform other duties for the Contractor.

Article 36. Inspection of Work and Materials.

The Engineers agents and employees of the Owner may for any purpose enter upon the work and premises used by the Contractor and the Contractor shall provide safe and proper facilities therefor.

The inspection of the work shall not relieve the Contractor of any of his obligations to fulfill the terms of the Contract as herein prescribed by the plans and the specifications.

tory completion of the project. The cost of so completing the work shall be deducted from any moneys due or which may become due the Contractor under the contract.

CONTROL OF MATERIALS

Article 39. Source of Supply and Quality.

The source of supply of each material shall be approved by the Engineer before delivery is started.

The Contractor shall furnish all materials required for the work specified in the contract, and said materials shall meet the requirements of the specifications for the kind of work involving their use.

Only new and first quality materials, conforming to the requirements of these specifications and approved by the Engineer shall be used in the work. If, after trial, it is found that sources of supply which have been approved do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved material from other approved sources.

The Contractor may be required to furnish sworn certificates as to quality and quantity of materials before said materials are incorporated in the work.

Article 40. Samples and Tests.

Tests of materials will be made by the Board or under its direction. The Contractor shall furnish such facilities as the Engineer may require for collecting and forwarding samples, and shall not make use of, or incorporate in the work, any material represented by the samples until the required tests have been made and the material accepted. The Contractor in all cases shall furnish the required samples without charge. Where tests are required of materials already incorporated in the work, the Contractor shall furnish samples, cut from the completed work at a time and as directed by the Engineer. The area affected by the removal shall be replaced and refinished, and the Contractor will receive no special compensation for any of the aforesaid work.

Article 41. Delivery and Storage of Materials.

Materials and equipment shall be progressively delivered at the site so that there will be neither delay in the progress of the work nor an accumulation of material that is not to be used within a reasonable time.

Materials shall be stored at the expense of the Contractor so as to insure the preservation of their quality and fitness for the work. When considered necessary by the Engineer, they shall be placed on wooden platforms or other hard clean surfaces, and not on the ground, and shall be placed under cover when directed. Stored materials shall be so located as to facilitate prompt inspection.

No cancellation of such insurance, whether by the insurer or by the insured, shall be valid unless written notice thereof is given by the party proposing cancellation to the other party and to the officer or agent who awarded the contract at least fifteen days prior to the intended effective date thereof, which date shall be expressed in said notice. Notice of cancellation sent by the party proposing cancellation, by registered mail, postage prepaid, with a return receipt of the addressee requested, shall be sufficient notice. An affidavit of any officer, agent or employee of the insurer or of the insured, as the case may be, duly authorized for the purpose, that he has so sent such notice addressed as aforesaid shall be prima facie evidence on the sending thereof as aforesaid. This section shall apply to the legal representatives, trustee in bankruptcy, receiver, assignee, trustee and the successor in interest of any such Contractor.

The aforesaid insurance shall be taken out and maintained at the Contractor's own expense.

2. Traffic Officers.

The Contractor shall take out and maintain at his own expense, insurance against damages arising from injury to special uniformed police, referred to in Article 58, while they are engaged in the performance of their duties. The coverage and provisions of such insurance shall be similar to those required to insure employees of the Contractor under the Workmen's Compensation Act, and shall be in addition thereto.

The aforesaid insurance shall be taken out and maintained at the Contractor's own expense.

3. Contractor's Public Liability and Property Damage Liability Insurance.

The Contractor shall furnish evidence to the Board that, with respect to the operations he performs, he carries Contractor's Public Liability Insurance providing for a limit of not less than a monetary value specified in the Special Provisions for all damages arising out of bodily injuries to or death of one person, and, subject to that limit for each person, a total limit of a monetary value specified in the Special Provisions for all damages arising out of bodily injuries to or death of two or more persons in any one accident, and Contractor's Property Damage Liability Insurance providing for a limit of not less than a monetary value specified in the Special Provisions for all damages arising out of injury to or destruction of property in any one accident and, subject to that limit per accident, a total (or aggregate) limit of a monetary value specified in the Special Provisions for all damages arising out of injury to or destruction of property during the policy period.

If any part of the work is sublet similar insurance shall be provided by or in behalf of the subcontractors to cover their operations.

Such property damage and public liability insurance as are provided under this Contract must cover all the various types and items of work that are to be undertaken. For the purposes of this Contract the insurance shall be considered to be in full effect from the date of signing of the Contract to the date of the final acceptance of the work.

lodge, board and trade where and with whom he elects, and neither the Contractor nor his agents or employees shall directly or indirectly require as a condition of employment therein that an employee shall lodge, board or trade at a particular place or with a particular person. Attention of bidders is called to Section 148 of Chapter 149 of the General Laws, and acts in amendment thereof which require the weekly payment of employees.

Article 47. Permits and Licenses.

The Contractor shall procure at his own expense all permits and licenses, pay all charges and fees and give all notices necessary and due in connection with the lawful prosecution of the work.

Article 48. Patented Devices, Materials and Processes.

Whenever the Contractor desires to use any design, device, material, or process covered by letters patent or copyright, the right for such use shall be secured by suitable legal agreement with the patentee or owner, and a copy of this agreement shall be filed with the Owner.

Article 49. Sanitary Provisions.

The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements of the Department of Public Health, local health officials or of other authorities having jurisdiction.

Article 50. Public Safety and Convenience.

The Contractor shall be responsible for the maintenance of traffic over, through or around the work included in his contract with the maximum of safety and practicable convenience to such traffic during the life of the contract, and whether or not work thereon has been suspended temporarily. He shall take all precautions for preventing injuries to persons or damage to property in or about the work. If the Contractor constructs temporary bridges or provides temporary crossings of streams, his responsibility for accidents shall include the roadway approaches as well as the structures of such crossings.

The work shall be carried on in such a manner as to provide safe passage at all times for public travel and with least obstruction to traffic. The convenience of the general public and of residents along and adjacent to the project shall be provided for in an adequate and satisfactory manner. The Contractor shall provide and maintain at his own expense (except as otherwise provided herein) in a safe and passable condition, such temporary by-passes and temporary bridges as may be necessary to accommodate traffic on and around the construction; and he shall provide and maintain, in a safe condition, temporary approaches to and crossings of intersecting highways.

Roads shall be closed to travel only as directed by the Engineer. Where the new construction coincides with the present traveled way, the Contractor shall so carry on his work that travel will not be obstructed.

his operations to avoid injury to underground structures such as water or gas mains, pipes, conduits, manholes, catch basins, etc. When necessary, the Contractor shall cooperate with representatives of public service companies in order to avoid damage to their structures by furnishing and/or erecting suitable supports, props, shoring or other means of protection.

Fire hydrants adjacent to the work at all times shall be readily accessible to fire apparatus and no material or other obstructions shall be placed within a radius of ten (10) feet of a fire hydrant.

Land monuments and property marks shall be carefully protected and if necessary to remove the same, he shall do so only at the Engineer's direction and after an authorized agent has witnessed or otherwise referenced their location. The Contractor shall not injure or remove trees or shrubs without proper authority. Insofar as possible the Contractor shall confine his movements and operations to the area within the limits of the location and the area outside the scope of the work shall not be disturbed except as directed.

Article 53. Responsibility for Damage Claims.

The Contractor shall take all responsibility for the work and take all precautions for preventing injuries to persons and property in or about the work; shall bear all losses resulting to him on account of the amount or character of the work, or on account of the weather elements or other causes, and the Contractor shall indemnify and save harmless the Owner and all of its officers, agents and employees against all suits, claims or liability of every name and nature, arising out of or in consequence of any acts of omission or neglect of the Contractor in the performance of the work covered by the contract and/or failure to comply with the terms and conditions of said contract, whether by himself or his employees or subcontractors.

Damage to materials furnished by the Owner or damage to the Owner's property, either now existing or constructed under this Contract, and all loss or deterioration occurring prior to the final acceptance of the work, and resulting from the Contractor's operations, shall be made good by the Contractor at no expense to the Owner.

Article 54. Contractor's Responsibility for the Work.

Until its final approval by the Owner, the Contractor shall assume full charge and care of the work and he shall take every necessary precaution against injury or damage to the work by action of the elements, or from any cause whatsoever, whether arising from the execution or the non-execution of the contract. The Contractor shall bear all losses resulting to him on account of the amount or the character of the work, or because the nature of the land in or on which the work is done is different from what was estimated or expected, or on account of the weather elements, or other causes.

The Contractor shall rebuild, repair, restore and make good at his own expense, all injuries or damages to any portion of the work occasioned by any of the above causes before the completion of the work and the accep-

the Owner may, at its discretion, pay the same, and the Contractor shall repay to the Owner all sums so paid. The Owner may also, with the written consent of the Contractor, use any moneys retained, due or to become due under the contract, for the purpose of paying for labor and materials and for the rental of appliances and equipment for the work for which claims have not been filed as specified above. It is understood that the security required by Section 29 of Chapter 149 of the General Laws, Tercentenary Edition, is obtained both by the bond accompanying the contract and by the power of the Owner to retain and pay money under the provisions of this article, but the release of one shall in no way impair or discharge the other.

Article 56. No Waiver of Legal Rights.

Neither the inspection by the Owner nor any of its employees or agents, nor any order, measurement or certificate by the Engineer, nor any order by the Owner for the payment of money, nor any payment for, or acceptance of, the whole or any part of the work by the Engineer or Owner, nor any extension of time, nor any possession taken by the Owner or its employees, shall operate as a waiver of any provision of the contract, or of any power herein reserved to the Owner or any right to damages herein provided; nor shall any waiver or any breach of the contract be held to be a waiver of any other or subsequent breach. Any remedy provided in the contract shall be taken and construed as cumulative, that is, in addition to each and every other remedy, herein provided; and the Owner shall also be entitled as of right to a writ of injunction against any breach of any of the provisions of the contract.

Article 57. Use of Explosives.

When the use of explosives is necessary for the prosecution of the work, the Contractor shall observe the utmost care not to endanger life and property, and whenever directed, the number and size of the charges shall be reduced. All explosives shall be stored in a secure manner and all such storage places shall be marked clearly "DANGEROUS - EXPLOSIVES," and shall be in the care of competent watchmen at all times. The method of storage and handling explosives and highly inflammable materials shall conform with all the State laws and regulations, as well as any local requirements.

Prior to blasting, the Contractor shall serve reasonable notice thereof to the operating official or company, or companies, leasing or owning pipes, conduits, poles, wires, etc., in danger of being injured by the blasting in order that a representative of said owner or lessees may be present at the site, and he shall take proper precaution to prevent such injury by the use of sufficient dunnage.

No blasting shall be attempted until sufficient warning has been given to all persons in the vicinity of the work.

The cost of additional bond or insurance, if any, required by the Owner and/or his agents, or by other duly authorized officials, shall be borne by the Contractor. No extra compensation will be paid the Contractor for the additional risk involved in blasting, for the additional cost of the extreme precautions required for safe blasting or for the additional cost of bonds or insurance required.

Article 58. Traffic Officers and Flagmen.

When in the opinion of the Owner it is necessary that special uni-

The Contractor shall comply with the provisions of Section 179A of Chapter 149 of the General Laws, relative to giving such preference to citizens in awarding contracts for public work as is therein provided.

Article 61. Schedule of Operations.

Before commencing work, the Contractor shall, if required, submit a schedule of operations for approval by the Engineer. The schedule shall show the methods and order of operations that the Contractor proposes to use. The approval of the schedule by the Engineer shall not be construed as relieving the Contractor from any responsibility.

Article 62. Prosecution of Work.

The Contractor shall commence work within seven (7) calendar days after the execution of the contract, or within such other period as the Engineer shall authorize in writing, (approved by the Owner) at such points as the Engineer may direct, and he shall thereafter prosecute the work at such points and in such order as the Engineer may from time to time prescribe.

Should the prosecution of the work for any reason be discontinued, the Contractor shall notify the Engineer at least twenty-four (24) hours in advance of resuming operations.

It is the purpose of the Owner to complete the work in the shortest time possible and consistent with approved construction. To this end, Contractors will be required to use improved methods and equipment for doing the work and various parts thereof. All equipment shall be complete and well designed, and the organization shall be efficient and effective.

If, in the opinion of the Engineer, it is necessary at any time, the Contractor shall, when directed, employ such forces and equipment for one or more additional shifts as will be required to insure the proper completion of the work. The Contractor shall provide and maintain, including power or fuel, sufficient lights for the safety of his construction forces and to ensure the proper construction, inspection and prosecution of the work; in addition to any lights necessary to protect the work or the public. The Contractor shall not receive any compensation therefor in addition to the contract unit prices.

The Contractor shall work diligently and steadily on the work, and when ordered in writing by the Engineer to either begin work again or to increase personnel and equipment on the work to speed up progress, the Contractor fails so to do within 5 calendar days, the Contractor shall be considered to have abandoned the job and the Bonding Company shall be notified to complete the work or forces and equipment shall be engaged by the owner to complete the work as per conditions herein.

Article 63. Delay in Commencing Work.

The Owner may delay the commencing of the work, or any part thereof, if the Owner shall deem it best for its interests to do so. The Contractor shall have no claim for damages on account of such delay, but shall be entitled to an equivalent extension of time in which to complete the whole

The Engineer is to constitute an adjudicator in regard to this Article of the Contract. He is to determine the cost or loss suffered by the Owner as a result of the delay in completion of the work.

Whatever the sum of money may become due and payable to the Owner by the Contractor under this article may be retained out of money belonging to the Contractor in the hands and possession of the Owner; and it is agreed that this article is to be construed and treated both by the parties to the contract and by all courts of law or equity, not as imposing a penalty upon said Contractor for failing fully to complete said work as agreed on or before the time specified in the Proposal, but as liquidated damages to compensate said Owner for all damages actually suffered because of the failure of the Contractor fully to complete said work on or before the date of completion specified in the Proposal.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in nowise operate as a waiver on the part of the Owner of any of its rights under the contract.

Article 68. Annulment of Contract.

If the Contractor shall be adjudged a bankrupt, or if he shall make a general assignment for the benefit of his creditors, or if a receiver of his property shall be appointed, or if the work to be done under the contract shall be abandoned, or if the contract or any part thereof shall be sublet without the previous written consent of the Owner, or if the contract or any claim thereunder shall be assigned by the Contractor otherwise than as herein specified, or if at any time the Engineer shall be of the opinion, and shall so certify in writing to the Owner that the work, or any part thereof, is unnecessarily or unreasonably delayed, or that the Contractor has violated any of the provisions of the contract, the Owner may notify the Contractor to discontinue all work, or any part thereof; and thereupon the Contractor shall discontinue such work, or such part thereof as the Owner may designate, and the Owner may thereupon, by contract or otherwise, as it may determine, complete the work, or such part thereof, and charge the entire expense of so completing the work or part thereof to the Contractor; and for such completion the Owner for itself or its agents may take possession of and use or cause to be used in the completion of the work or part thereof of any such materials, animals, machinery, implements and tools of every description as may be found upon the line of said work. The Owner shall not be liable for any depreciation, loss or damage to said materials, animals, machinery, implements or tools during said use, nor until removed by the Contractor after completion of the work. Unless so removed within fifteen (15) days after mailing of notice so to do, they may be sold at public auction, after publication of notice thereof at least twice in any newspaper published in the City or Town, and the proceeds credited to the Contractor's expense subject to a lien for the storage charges.

If the engineer shall certify that the rate of progress is not satisfactory the Owner may, instead of notifying the Contractor to discontinue all work or any part thereof, notify him from time to time to increase the force, equipment and plant, or any of them, employed on the whole or any part of the work, stating the amount of increase required; and unless he shall within five (5) calendar days after any such notice, increase his force, equipment and plant to the extent required therein, and maintain and

tered during the prosecution of the work and until its final acceptance by the Owner, and for all risks of every description connected with the prosecution of the work, also for all expenses incurred by, or in consequence of the suspension or discontinuance or the said prosecution of the work as herein specified, and for any infringement of patent, trade-mark or copyright, and for completing the work in an acceptable manner according to the plans and specifications.

The payment of any current estimate, or of any retained percentage shall in no way constitute an acknowledgement of the acceptance of the work or in no way or degree prejudice or affect the obligation of the Contractor, at his own cost and expense, to repair, correct, renew or replace any defects and imperfections in the construction of, or in the strength of, or quality of materials used in or about the construction of the work under contract and its appurtenances, as well as all damages due or attributable to such defects; which defects, imperfections or damages shall have been discovered on or before the final inspection and acceptance of the work. The Engineer shall be the sole judge of such defects, imperfections, or damages and the Contractor shall be liable to the Owner for failure to correct the same as provided herein.

Article 71. Payment for Increased or Decreased Quantities.

An increase in quantities of work to be performed (as set forth in Articles 3, 22 and 23) will be paid for at the contract unit price for the actual work done, in the same manner as if such work had been included in the original estimated quantities. No allowance will be made for anticipated profits or underruns in quantities.

Changes involving extra work will be paid for according to the method stipulated in the extra work orders.

Article 72. Omitted Items.

The Engineer may order omitted from the work any items or portions of the work found unnecessary to the improvement and such omission shall not operate as a waiver of any condition of the contract nor invalidate any of the provisions thereof, nor shall the Contractor have any claim for anticipated profit.

Article 73. Payment for Extra Work.

Extra work will be paid for in accordance with the accepted and approved extra work orders according to procedures outlined in Articles 22 and 23.

The determination of the Engineer shall be final upon all questions pertaining to the amount and value of extra work performed.

In making any change contemplated, the charge or credit for the change shall be determined by the Owner in one of the following methods prior to the issuance of the order for the changed work:

balance not retained as aforesaid, after deducting therefrom all previous payments and all sums to be kept or retained under the provision of this contract.

No such estimate or payment shall be required to be made when, in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the contract, or when in his judgment the total value of the work done since the last estimate amounts to less than three hundred (300) dollars.

The Owner may, if it deems it expedient so to do, cause estimates to be made more frequently than once in each month, and it may cause payments to be made more frequently to the Contractor. The Owner may at its option retain, temporarily or permanently, a smaller amount than as aforesaid, and may cause the Contractor to be paid, temporarily or permanently, from time to time such portions of the reserves as it deems prudent.

The Owner may also allow partial payment on such materials and/or items delivered on the site of the work but not considered as erected or complete in place (for which the ordinary payment as specified above would place) but for which, in the judgment and opinion of the Engineer, the Contractor shall be allowed a partial compensation, due to the fact that the scheduled completion of such materials and items has been hindered and delayed by either temporary closing of the project or by such other causes over which the Contractor has no control. The amount of such partial payments will be determined by the Engineer but in no case shall it exceed seventy per cent (70%) of the contract unit price.

The Owner may increase the retained percentage as security for claims or costs incurred under Articles 55, 62, 67 and 68 or any other section of the Contract.

Article 75. Acceptance and Final Payment.

The Engineer shall, as soon as practicable after the satisfactory completion of the contract, make a final estimate of the amount of work done thereunder and the value of such work, and the Owner shall, within sixty-five (65) days from and after the day the work has been approved by the Owner, forward to the Contractor a copy of the final estimate together with an agreement form for his acceptance. After such acceptance has been filed with the Owner payment of the entire sum will be made, so found to be due thereunder after deducting therefrom all previous payments and all amounts to be kept and all amounts to be retained under the provisions of the contract. All prior estimates and payments shall be subject to correction in the final estimate and payment.

**SPECIAL
PROVISIONS**



**HAMPDEN COUNTY
APPROVED**

SEP 12 1956

William J. Harrison
Thomas F. Sullivan
Ralph S. Walsh
County Commissioners

**TIGHE & BOND
CONSULTING ENGINEERS
HOLYOKE, MASS.**

SPECIAL PROVISIONS

Article 76 Scope of the Work General plans, elevations, and details of the proposed work on 23 sheets of plans entitled:

RECONSTRUCTION OF FLOOD DAMAGE
AT
BEAR HOLE DAM
BOARD OF WATER COMMISSIONERS
TOWN OF WEST SPRINGFIELD, MASS.

Tighe & Bond, Consulting Engineers
Holyoke, Mass.

Scale as shown May, 1956

Further details of the work and the various items and proposals included in the work are found in the specifications, under Standard details, and in addenda; all of which are hereby made a part of the Contract Document.

The Contractor will furnish all plant, labor, equipment and materials necessary for or incidental to the work contemplated under this Contract. The work consists of clearing the site, excavation, concrete work, earth work, final grading, pipeline work, and all other work required for or incidental to the construction of a water supply storage dam, as shown on the plans.

Article 77 Proposal Guarantee Each proposal from a Contractor must be accompanied by cash or certified check in the amount of \$7,500.00. Such certified check shall be drawn upon a National Bank or Trust Company and shall be made out to the Town of West Springfield, c/o the Board of Water Commissioners, Town of West Springfield, Mass. (reference Articles 7, 16 and 19)

Article 78 Contract Bond A bond in the full amount of the contract with a surety company satisfactory to the owner will be required by the Town from the General Contractor for the faithful performance and full payment of all work required for labor and materials furnished under this contract.

Quadruplicate copies of all bonds and certificates are to be furnished to the Board of Water Commissioners, Town Hall, West Springfield, Mass.

Article 79 Insurance Requirements In accordance with Article 44 of the General Requirements, the Contractor is to furnish the following insurance:

Public Liability	\$100,000 - \$300,000
Property Damage	\$50,000 - \$100,000

The Contractor is warned to read carefully and to have his insurance company read carefully the provisions of Article 44.

The insurance certificate must include provision for that portion of Article 44, Page 18, of the General Requirements which reads:

"assume the defense of and indemnify and save harmless the Owner, together with his officers, employees and agents, from all suits, loss, cost or damage arising out of or attributable to claims related to the project".

The Contractor will be required to furnish a copy of the complete insurance contract, including all riders. This insurance contract must show that the insurance provided covers all phases of the work and all activities of the Contractor on this project.

The Contractor and his bonding company are warned that in the event they elect to furnish separate performance and payment bonds, each of the two bonds are to be furnished in the full amount of the contract.

Article 80 Special Conditions The Contractor's attention is directed to the following special conditions affecting the progress and scheduling of work under this contract.

- A. In making an award, the Owner will not only consider the unit prices and total value of the contract but also reserves the right to consider the proposed construction time as stated by the Contractor in his proposal form. The Owner reserves the right to make an award to a bidder other than the lowest responsible bidder based on the total bid price. In the latter case, the Owner will balance probable increased cost against the shorter construction time in order to determine the possible benefit to the Town.

The Owner also reserves the right to consider the advantage to the Town in making an award of both the dam and the filter plant to one Contractor.

- B. Contractor is to inspect the material furnished by the Town at the time of the signing of the contract and all damage and shortages are to be noted. Hereafter the Contractor is to be responsible for these materials and any loss or damage is to be made good by the Contractor at no expense to the Owner.

- C. The Contractor is warned that his work must be coordinated with the construction activities of the contractors on the filter plant. At all times the Contractor on the filter plant must be allowed reasonable access to the filter plant area.

The Contractor at the filter plant will be required under his contract to provide for the use of the existing roadway and bridge upstream of the #1 Filter. The existing bridge is to be maintained until such time as it is no longer of value to the dam contract. At that time the dam Contractor will be responsible for its removal under Item 1 of his contract.

- D. The Contractor will be supplied water for construction purposes

from existing and proposed hydrants within the work area. The Contractor will pay standard rates and follow standard Water Department procedure in order to obtain this water. The Contractor will then be reimbursed in subsequent payments for the full amount of his payment for water to the Water Dept. Thus, the cost of water will be nothing but a bookkeeping item for the Contractor.

- E. Access Rd. #2 will be maintained in a usable condition by the Contractor using material furnished and placed under the provisions of Item 14. The Contractor is required to do all scraping and blading to maintain the road's contour and to provide for free drainage.

Article 81 Materials Furnished by The Owner The owner will furnish the following materials:

1. All pipeline material required for construction of the 24" Lock Joint Pipeline from the dam to and including the point of closure.
2. All material required for the 5 sluice gates shown on the plans. This is to include the gates themselves, stems and stem guides, floor stands, wall castings and thimbles, and anchor bolts. All materials furnished by the owner are assumed to be in first class condition ready for use.

Materials should be inspected by the contractor at the time of signing of the contract. Any shortages or damages that occur to these materials after the signing of the contract will be the Contractor's responsibility.

Prior to installation, the Contractor should again carefully inspect these materials. The Owner will not be responsible for the failure of any material furnished except that the piece of material will be replaced by the Owner if failure results from causes not the fault of the Contractor. The cost of removing the damaged piece and the installation of the replacement will be for the Contractor's account.

Article 82 Engineering Services The Owner will furnish the General Contractor with the required benchmarks and reference points for the construction of the dam. All engineering and survey work required to work from these benchmarks and reference points to the completed dam are to be furnished by the Contractor and the cost thereof included in his proposal.

The Owner reserves the right to do such engineering and survey work as he may deem necessary to review the work of the General Contractor, to determine pay quantities and for such other reasons as the Owner may deem necessary.

Article 83 Liquidated Damages The Contractor's attention is directed to the provisions of Article 57 of the General Require-

ments of this contract and to the provisions of Article 80 of the Special Provisions of this contract. For the purposes of these articles, completion is hereby defined as the time when all work is completed and the dam ready to impound water. The only thing not included within this completion time is the minor clean-up work and landscaping that may be required at the end of the job.

The for purposes of this Contract, the sum of money referred to in paragraph 2 of Article 67 is hereby defined by the Owner as \$50.00 per calendar day that the job shall remain substantially uncompleted beyond the time specified in the Contractor's proposal. This figure will also be applied in the event the Owner elects to compare bids on the basis of construction time.

ITEM 1

PREPARATION OF THE SITE

Article 84A Work Included Under this item, the Contractor is to do all work required to prepare the site for construction, to control and divert the brook, to clean up the old dam site, and to do all other work not especially provided for under the items of this contract but required for or incidental to the construction of the dam.

Article 84B Old Dam Site At the old dam site upstream of the proposed dam to be constructed under this contract, an old wooden dam has been exposed in the breach. The General Contractor under this item is required to clean out these old timbers insofar as is possible. The timbers are to be either pulled out using a crane or are to be cut off within 6" of existing ground.

The Contractor under this item is to remove the damaged sluice gate from the existing spillway. The anchor bolts are to be burned off, flush with the face of the concrete and the sluice gate, stem and guides, and the floor stand are to be removed and disposed of. The Contractor is also to remove the damaged wooden flashboards and spillway bridge from the existing spillway.

No work on the existing spillway concrete structure or on the remaining portions of the earthen dam is contemplated under this item.

Article 84C Bridge The existing concrete bridge over the brook bed located downstream of the proposed dam site is to be retained as long as possible for use by the Contractors working in the area. When deemed necessary by the Dam Contractor and approved by the Engineer, this bridge is to be removed. Removal of the concrete portions of the bridge will be paid for under Item No. 4. The removal of earth involved will be paid for under Item No. 3. The masonry from this bridge may be disposed of by burying in the plateau downstream of the proposed dam between lines 6+00 and 7+00.

Article 84D Water Control Under this item, the General Contractor is to do all necessary work required for the control and diversion of water in the construction area.

In the construction of the dam itself, the plans show the construction of two cofferdams. These cofferdams are required in order to divert the brook through the new spillway and spillway channel. These cofferdams will be constructed by excavating a trench under water and placing impervious material under water insofar as is possible. Upon the completion of these cofferdams, the brook will be diverted through the new spillway and spillway channel. The area between the cofferdams will then be dewatered and that section of the dam will be placed upon existing impervious soil "in the dry".

The Contractor will be required to take certain construction steps for the control of storm water runoff from the sidehill during the construction period. This work will generally consist of the construction and maintenance of ditches to divert this runoff downstream of the dam and prevent the scour of newly placed fill from storm water runoff from the sidehill.

The ground water table in the easterly embankment of the dam is held at approximately the elevation 180 by a layer of impervious material. This conditions results in springs in the easterly abutment. If the construction of the dam exposes any springs which are deemed harmful to the construction of and future safety of the dam, the Engineer will order additional work for the control of these springs. In general, this additional work will consist of the installation of drainage provisions under the applicable items to lead these springs away from the dam site.

Article 84E Engineer's Facilities The Contractor will be required to provide a weathertight building containing approximately 100 sq. ft. of floor space to be used by the Engineer. Windows and doors with suitable locking devices and screens are to be provided. Electricity and heat are to be provided as required by the Engineer.

The Contractor is to arrange for an extension of the telephone to be installed in the Engineer's building at the filter plant site for use at the dam site.

The Engineer's building is to be provided with a built-in plan table having a smooth top constructed of masonite or similar material. Two chairs are to be provided.

The cost of constructing and maintaining this building, including utilities, is to be borne by the General Contractor.

Article 84F Photographs The Contractor is to provide six prints of each of 15 different photographs taken on the job as it progresses. Photographs are generally to be taken in groups of three at a time. The prints are to be approximately 8x10 and a glossy, the type normally taken for newspaper work. The cost of these photographs is to be included by the General Contractor in his proposal under this item.

Article 84G Signs The Contractor is to furnish and install two signs, lettered as shown on the Standard Detail attached to the rear of these specifications. In general, the signs will have one line of 6" high letters, a second line of 6" high letters and two lines of 2½" high letters.

One sign is to be installed by the Contractor at the old dam site. The second sign is to be installed by the Contractor at the spillway at the new dam site. Both signs are to be installed as directed by the Engineer.

Article 84 Payment The Contractor will receive payment under Item No. 1 as specified in his proposal for all work described hereinabove. The Contractor will be paid on a monthly basis for the work specified and the amount received each month will be equal to the total bid price under Item No. 1 provided by the Contractor's estimated construction time in months.

ITEM 2

CLEARING AND GRUBBING

Article 85A Work Included Under this item, the Contractor will do all clearing and grubbing required for the construction of the dam, the operation of the specified borrow pit, clearing of the reservoir area as far as the water level and all other cleaning and grubbing required for the prosecution of the job.

Article 85B Work Area Under this item, the Contractor will be required to clear the easterly sidehill between the old dam site and the existing cleared area at the new dam site. This area is to be cleared to elevation 170.

The westerly sidehill is to be cleared of all vegetation existing between the old dam site and the new dam site. Only the vegetation below elevation 170 is to be removed under this contract.

All borrow areas in the westerly sidehill used for impervious material are to be cleared and grubbed under this item of the Contract.

The dam site and borrow pit for pervious material have been cleared under a previous contract. It is assumed that this clearing is sufficient for the construction requirements. However, in the event that it is necessary to do additional clearing for either the pervious borrow pit or for the construction of the dam itself, the Engineer will authorize such further clearing under the provisions of Item 2 of the Contract.

Article 85C Construction Methods All trees, brush and other vegetation is to be cut and burned or removed from the job site. All organic debris is to be removed and disposed of. An existing dump at the top of the hill on Access Road #1 can be used for the disposal of stumps, partially burned trees, and other organic debris. No organic debris is to be buried in the plateau downstream of the proposed dam.

All areas to be stripped and grubbed under this item are to have all vegetation, leaf mold and organic material removed from the surface. This material is to be bulldozed together into piles and stockpiled for use in covering the plateau area downstream of the proposed dam. It is assumed that Excavation under Item 3 will be required after completion of grubbing in order to prepare the ground surface for placement of earth fill.

The Contractor is to have proper permits for any open fires and proper equipment to control these open fires. No open fires are to be allowed without the approval of the Superintendent of the Water Dept. and the Town of West Springfield Fire Chief.

Article 85D Payment The Contractor will receive payment at the unit price specified in his proposal for each acre of area cleared and grubbed and stripped in accordance with the specifications. The Contractor's unit price will include all labor, equipment and materials required for or incidental to the clearing operation. It is to include the stockpiling of all surface material, leaf mold, and other organic material and its subsequent spreading on the plateau downstream of the dam. It is also to include the disposal of all partially burned material and stumps at the specified dump on Access Rd. #1.

ITEMS 3 & 4

EXCAVATION

Article 86A Work Included Under Item #3, the General Contractor is to do all earth excavation required for or incidental to the construction of the dam. This is to include excavation for the spillway, excavation and removal of any unsatisfactory material within the area on which the dam is to be built, excavation for the cofferdams shown on the plans and all other excavation required for or incidental to the construction of the dam.

Under Item 4 the Contractor will be required to do all rock excavation required for the construction of the spillway and spillway channel and all other rock excavation required for or incidental to the job.

It is assumed that the borrow pits operated on the westerly sidehill to obtain impervious material will expose ledge. In the event that the Contractor elects to operate a quarry at these locations for the purposes of obtaining riprap for use under Item 16, the Contractor will receive payment for rock removed and placed as riprap under the provisions of Item 16. The Contractor will not receive any payment under Item 4 for rock excavated solely for the purpose of obtaining riprap for use under Item 16.

Article 86B Construction Methods The General Contractor will be required to excavate for the spillway in accordance with the lines and grade shown on the plans. Where shown on the plans, earth is to be left in its existing location and in undisturbed condition.

Of those sections of the spillway and culvert that are to be carried down to ledge, the Contractor will be paid under Item 3 for all earth removed within the two supports for the culvert and spillway and will be paid under the Impervious Fill Items for material replaced after the construction of the footings and walls.

The General Contractor will be required to construct the cofferdams shown on the plans in order to divert the brook thru the new spillway and spillway channel. This excavation work for the cofferdams will be done under water to some extent, and the placement of impervious or semi-pervious fill for the cofferdams will be done under water. All earth removed for construction of the dam and its cofferdams is to be disposed of in the plateau downstream of the dam.

Paylines for earth excavation for structures are to extend from the bottom of the concrete or from the rock line to the surface of the ground. The paylines are to be one foot outside the limit of neat concrete lines and are to extend vertically from the bottom of excavation or the top of ledge to the ground surface. In the

case of excavation for the cofferdams and spillway channel, the Contractor will be paid for the amount of excavation shown on the plans or required by the Engineer in the field.

Article 85C Rock Excavation Under this Item 4, the General Contractor will do all rock excavation required for the construction of the spillway, spillway channel and other work incidental to the construction of the dam.

Under Item 4, the General Contractor will receive payment for the volume of concrete involved in the removal of the existing bridge across the brook downstream of the proposed dam site.

Rock is to be removed from the construction of the spillway to the lines and grades shown on the plans. In general, the lines and grades shown on the plans are the minimum acceptable lines and grades. In the event that sound rock is not encountered at the surface of the ledge, the contractor will be required to excavate into the ledge such distance as determined by the Engineer to be required in order to obtain sound rock as foundation material for the spillway and culvert section. In no case will the Contractor be allowed to excavate less ledge than is shown on the plans as being required for the construction of the footing and spillway walls.

All rock excavated under Item 4 is to be disposed of as riprap on the upstream face of the dam. This rock will replace an equivalent amount of riprap under Item 16. No payment for rock excavated under Item 4 will be made under Item 16, regardless of the fact that it is being placed as rock fill and riprap.

The Contractor will be paid for rock removed under this item to the required paylines as shown on the plans and as specified by the Engineer at the time of construction. The minimum removal of rock is shown on the plan. The Contractor will be paid for all rock removed providing it is within 2 ft. horizontally of the surface of the concrete. Thus, the Contractor has an overbreak allowance of 2 ft. horizontally. The Contractor will not be allowed to remove any ledge below the limits of the bottom of concrete to be placed and any ledge so removed is to be replaced with concrete at the Contractor's expense.

All necessary precautions shall be taken in blasting operations to preserve the rock outside the lines of excavation in the soundest possible condition and at the same time to produce a mass of blasted rock that will be suitable for use in the permanent work. To accomplish this the Contractor shall determine the spacing of the drill holes across the open cuts, and also regulate the amount and strength of explosives, so that in the outer portions of the cut, suitable large pieces will be produced for use as dumped rock and the wall rock will be protected from shattering.

Blasting, in proximity to the rock foundations of concrete structures, shall be conducted with such amount and strength of explosives as will break the rock approximately to the lines and grades desired and yet will leave the rock in an unshattered condition. Preparation of the final foundations of these structures shall be done by drilling, picking, barring, wedging or similar methods. Where required by the Engineer, the rock at the site of the structures shall be cut rough steps or benches to provide better bond and bearing surfaces. To aid inspection at locations and to insure good bond with the concrete, the foundation shall be thoroughly cleaned by streams of water or jets of air or a combination of both, or by wet sand-blasting as required by the Engineer.

If the Contractor's removal of ledge is within 6" of the required concrete line, concrete will be poured against existing ledge and the Contractor shall receive payment for the full quantity of concrete. If the ledge removed has an overbreak of more than 6" from the neat lines of the concrete, the Contractor will be required to erect forms in order to confine the amount of concrete that is placed.

Article 86B Existing pipelines There are two existing pipelines which pass through the proposed dam area and which must be removed within the limits of the dam construction. One pipeline is a 12" cast iron pipeline located on the west side of the brook and immediately east of the existing Access Road. This pipeline is in the approximate location of the new spillway and it is assumed that it will be removed along with excavation for the spillway. No special pay item is provided for the removal of the pipeline. However, in the event that the pipeline is not fully removed during excavation for the spillway, the Contractor will be paid additional excavation required for the complete removal of the pipeline.

A second pipeline is located at the toe of the easterly sidehill. The exact size, location and depth of this pipeline is unknown. The General Contractor will be paid under Item 3 to do the required excavation to expose and remove this pipeline within the limits of the dam site.

Article 86E Unauthorized Excavation The Contractor will not be paid for any excavation outside the specified paylines and not definitely authorized by the Engineer in writing. In the event that such unauthorized excavation is carried out underneath a structure or pipeline, the Contractor will be required to replace the disturbed material with material satisfactory to the Engineer. In general, in the case of the spillway culvert that is to be founded on hardpan, any unauthorized excavation will be replaced with concrete.

The Contractor is hereby warned that the downstream section of the

spillway culvert is to be located on undisturbed hardpan. The Contractor will be allowed to use machine operation methods of excavation providing no material is disturbed below the level of the bottom of the concrete. Upon completion of machine operation, all loose or disturbed earth is to be removed using hand methods. The bottom of excavation is to be leveled up as necessary and concrete is to be poured directly against the hardpan.

Article 86F Payment The General Contractor will be paid the unit price specified in this proposal for each cubic yard of excavation completed in accordance with the requirements of this contract. Paylines for earth excavation are to be 1 Ft. horizontally outside the limit of concrete placement in the case of structures and the inside diameter of the pipeline plus 24 inches in the case of pipelines. The vertical dimension for paylines for earth excavation will extend from the bottom of concrete to be placed to the top or surface of the existing ground level. In cases where ledge is encountered, the payline for earth excavation will extend from the surface of the ledge to existing ground level.

The paylines for rock excavation under Item 4 are to extend from the bottom of concrete to the top of the ledge removed. The ledge will be paid for to the actual removal lines providing that the overbreak does not extend more than 2 ft. horizontally from the base of the concrete. In no case will ledge be paid for which has been removed more than 2 ft. away from the proposed neat concrete line.

Only ledge requiring removal by blasting or drilling will be paid for under Item 4. All shaley or laminated material removed with a backhoe or bulldozer, and all rotten stone or hardpan that can be removed by normal excavation methods or by pick and shovel will not be paid for under Item 4.

The Contractor's prices under Items 3 and 4 are to include all necessary handling and re-handling of the material removed, including stockpiling material for future use if necessary. All rock excavation under Item 4 is to be disposed of on the upstream face of the dam and will replace riprap under Item 16. The Contractor will receive payment under Item 4 for rock excavation but will not receive any payment under Item 16 for the disposal of this rock excavation on the upstream face of the dam.

The Contractor will receive payment from the surface of the existing ground regardless of whether it is substantially altered between the time that work begins and the time that actual excavation takes place at a given area. In other words, if the Contractor places fill at a given location and then later is required to excavate thru the fill and thru existing native material in order to place a pipeline or structure, the Contractor will be paid only for the excavation from the original ground surface to the bottom of pipeline or structure so placed. The Contractor will be paid once and only once for excavation regardless of how many times a given piece of excavation falls within paylines for various structures and pipelines.

ITEM 5

CONCRETE

Article 87A Work Included Under this item, all concrete required for the Project will be furnished and placed by the Contractor. The only exception to this is insulating concrete to be furnished and placed under Item 7.

Article 87B General It is the intent of these specifications to secure, for every part of the work, concrete of homogeneous structure which, when hardened, will have the required strength and resistance to weathering and disintegration. To this end, the requirements herein after specified must be met. Standard tests of the cement, aggregates, concrete and reinforcement will be conducted by the Engineer. The Contractor shall furnish the material for all required samples and labor as requested for obtaining samples. The Contractor agrees to accept as final the results of tests secured by testing laboratory engaged by Owner.

Article 87C Description Concrete furnished under Item 5 is to have a 30-day compressive strength of 2500 psi. It is to contain at least 5.6 bags of cement per cubic yard of concrete. Water is to be added in an amount not to exceed six (6) gallons per bag of cement so as to produce a slump of not more than 4-inches. Concrete

All concrete used under this Contract is to contain an air entraining agent used in accordance with the manufacturer's directions. The agent shall produce tiny, individual bubbles of air equal to 3%-6% by weight or volume of concrete. The cost of the air entrainment agent is to be included in Item 5

MATERIALS

Article 87D Portland Cement The Contractor shall furnish Portland Cement of the quality herein specified in sufficient quantity for the work required. All cement furnished for concrete in a given building shall be of the same type and color so as to avoid variations in the color of finished exposed concrete. Cement furnished shall be dry, free of lumps, and of a uniform blue-gray coloring. Cement shall meet the requirements of the A.S.T.M. Specifications C150-64, Type 2 or Type 3.

Article 87E Fine Aggregate The fine aggregate shall consist of sand composed of grains or particles of quartz or other hard and durable rocks, the surfaces of which are not coated with any foreign material nor worn smooth. The grains shall be moderately sharp, free from soft, decomposed or partly decomposed sand grains, lumps of clay or ferruginous cemented sand, mica, loam, sea salts, organic matter or other foreign materials. If the fine aggregate is washed it shall be allowed to stand at least twenty-four (24) hours in piles after washing before being used if so directed. The sand shall be well graded from coarse to fine and when tested by means of square mesh laboratory sieves shall meet the following requirements:

Passing 1/4" sieve - 100%
 Passing #10 sieve - 95% to 100%
 Passing #20 sieve - 30% to 75%
 Passing #50 sieve - 5% to 28%
 Passing #100 sieve - not more than 8%
 By elutriation test - not more than 3%

Article 87F Coarse Aggregate Coarse aggregate shall consist of crushed or screened stone gravel conforming to the following requirements: crushed stone or screened gravel shall consist of clean, hard, durable and impermeable particles, resistant to wear and frost and free from injurious amounts of organic matter, loam, clay, salt salts, mica and structurally weak particles. The particles shall be relatively round in shape and with gritty surfaces. Gravel shall be washed until the surfaces are clean and free of dust and surface coatings. In general, the use of gravel stone is preferred rather than crushed trap rock.

Article 87G Grading of Coarse Aggregate When tested by means of square mesh laboratory sieves, coarse aggregate shall meet the following requirements:

NOMINAL SIZE	PER CENT BY WEIGHT PASSING THROUGH			
1-1/2	1-1/2	3/4	3/8	#4
	95-100	30-60	5-20	0-5

Article 87H Water Water for use with cement shall be clean, clear and free from deleterious amounts of oil, acid, alkali, salts and organic matter. The water shall exhibit no deleterious effect upon the strength, setting or soundness of the cement.

Article 87I Forms Approved forms shall be provided and used by the Contractor. The forms shall be in good condition, clean and properly treated to give the concrete a smooth even finish. They shall be constructed of T&G lumber, plywood or composition facing and shall be sufficiently rigid so that they can be constructed and braced true to line and grade.

Forms shall be left in place until the concrete is sufficiently hardened and has attained a reasonable percentage of its final strength. Both before and after the form removal, proper attention must be paid to the moist curing of the concrete.

All form ties used are to be equipped with a ring welded or soldered to the tie rod near the center of the wall. This ring is to serve as a water stop.

The Engineer will require that the Contractor use ties that can be broken off within the wall and the resulting hole plugged with a grout containing an admixture to prevent shrinkage.

Article 87J Mixing. Mixer is to be of the batch type, having a rated capacity of at least one yard, and a gross volume at least twice its rated capacity. The mixer is to be charged dry and rotated for not less than 15 seconds. Water and admixtures are then to be added and the drum rotated for not less than 2 minutes for a 1-yard load plus 30 seconds for each additional yard in the load. Thus for a 5-yard load, a minimum mixing time of 4 minutes will be required. Under no circumstances is the mixing time to exceed four times the minimum mixing time nor exceed 15 minutes.

Article 87K Placing Concrete The forms shall be properly cleaned and wetted prior to the placing of concrete. All imbedded items are to be properly protected. All reinforcing is to be in proper condition and in the correct location. If the pour is to be made against existing concrete, the surface of the existing concrete shall be prepared as described in Article 87L.

Concrete shall be placed in a manner to prevent stone pockets, voids or segregation. Concrete shall not be dropped, flowed or dragged more than seven feet in the forms. Concrete shall be properly distributed and remixed in the forms with shovels, rods and vibration.

The Contractor will be allowed to use mechanical vibrators of a type and number approved by the Engineer. The use of the mechanical vibrators shall not eliminate the rodding of the concrete at the face of the forms.

In addition to steel reinforcement there will be built into, or set or attached to the concrete, pipes, anchors, or other metal objects as shown on the drawings or ordered. All necessary precautions shall be taken to prevent these objects from being displaced, broken or bent. Before placing concrete care shall be taken to determine that any embedded parts are firmly and securely fastened in place as indicated. They shall be clean and free of paint, rust, oil or any other coating or foreign matter. Concrete shall be packed tightly around pipes and other metal work so as to prevent leakage and secure perfect adhesion. Pipes shall be adequately protected from intrusion of concrete into them.

Article 87L Joints Only the construction joints called for on the plans will be allowed except on approval of the Engineer.

All horizontal construction joints are to be treated as follows: After pouring of the concrete and after initial set of the concrete has taken place, the construction joint is to be cleaned off with a jet of water or a jet of air and water mixed. The jet shall have sufficient force to clean off all loose concrete, scum and laitance. The jet shall expose and clean off aggregate but shall not undercut or loosen the aggregate.

Before pouring new concrete against concrete already in place and hardened, the surface shall again be cleaned with a water jet. The exposed aggregate shall then be mopped with a mortar composed of the same proportions of sand and cement as is in the concrete. The mortar shall be placed and mopped in place immediately prior to the placing of concrete and shall not have set up or hardened prior to the placing of concrete.

All construction and expansion joints are to be keyed. Two expansion joints allowed (one at junction of spillway section to culvert section; one at change in culvert from rock bearing to earth bearing) are to be formed with copper waterstop shown. All construction joints are to contain a 1/8" steel waterstop or 20 oz. water stop.

No vertical construction joints allowed at any location except at the two expansion joint locations and at junctions between the main spillway walls and the supporting diaphragm walls. Seepage rings to be poured integral with walls.

Article 87M Protection of Concrete and Curing The Contractor shall protect the concrete from damage by rain, sun, frost or underground water during and after placing, until properly cured and hardened in a manner satisfactory to the Engineer.

Cement is to be maintained at a temperature of not less than 50° F and not more than 100° F for a period of at least 7 days. During this period the concrete is to be kept properly covered and protected so as to maintain optimum moisture conditions.

Forms may be stripped at the end of 72 hours after pouring of concrete providing evaporation is retarded by the immediate placing of a waterproof film. This film is to be spray-applied as a liquid as the forms are stripped.

All methods of temperature and moisture control are to be subject to the approval of the Engineer. The Engineer reserves the right to vary these methods as necessary to produce the required results.

Article 87N Finishing Immediately after the removal of the forms, the work shall be inspected and defective work corrected. If the surface of the concrete is bulged, uneven, shows excessive voids, or has other markings which cannot be repaired satisfactorily, the entire section shall be removed as directed by the Engineer and replaced with with satisfactory work; all such removal and replacement work to be done at the expense of the Contractor. If the work is satisfactory, the minor repairs required are to be completed immediately and the required rubbing is to be done as soon as the concrete can be properly worked.

The Engineer shall be the sole judge of the satisfactory quality of the work completed. He shall determine as to whether the concrete is so poorly placed as to require removal or whether proper corrective work can result in a satisfactory job.

Concrete is to be finished as follows:

- (a) All exposed concrete is to be carefully rubbed and stoned so as to remove all fins, form marks and tie rod marks. Use of grout will not be required during the operation.
- (b) All other surfaces are to have rat-holes and form tie holes filled.

Article 87O Inspection The Engineer reserves the right to inspect the forms, reinforcing, etc., prior to the placing of concrete. The Contractor will be required to place one side of the wall forms and the reinforcing steel and shall give the Engineer reasonable notice to allow for inspection of the various features. Upon completion of forming and immediately before placing of concrete, the Engineer shall again be given reasonable notice to allow for final inspection. The Engineer will then give written approval for the placing of concrete for that portion of the work.

Article 87P Transit-mixed Concrete In the event that the Contractor uses a central batch plant for his operation, he will be required to meet the following conditions:

- (a) The batch plant is to be located in the Springfield-Holyoke-Westfield metropolitan area. It shall either be owned by the Contractor or have a background of five years' experience.
- (b) Trucks used are to be equipped with agitating-type bodies. Trucks shall arrive on the job with the mix dry. The provisions of Article 87J will apply in full.
- (c) Each truck arriving at the job is to have at least one copy of its "batch slip" and this copy is to be turned over to the Engineer. The batch slip is to quantity and class of concrete, the weights of cement and aggregate used and the time of departure from the batch plant. Also noted thereon is to be any admixture added at the batch plant.

Article 87Q Measurement Concrete quantities will be calculated based on the dimensions shown on the plans and such variations in these dimensions as may be approved by the engineer. In the event that concrete is placed to a smaller dimension than is shown on the plans and that such concrete is accepted by the Engineer, then the lesser dimension will be used to calculate the quantity. All major openings and pipes are to be deducted from the volume of concrete.

Article 87R Payment Payment will be made to the Contractor at the unit price specified in his Proposal for each cubic yard of cement furnished in place in the completed work in accordance with the Specifications. All concrete used will be paid for under Item 5 except as otherwise definitely noted. Admixtures used will be paid for under the applicable Item except for air entrainment agents.

The Contractor's unit price is to include the cost of form-work, ties, bracing, curing, finishing and all labor, equipment or materials required for or incidental to the Item. Also included is to be all forming around pipe openings and work of a like nature. All finishing is to be included in the Contractor's unit price for concrete. All waterstops and treatment of construction joints are to be included in the Contractor's unit price.

ITEM 6

WATERPROOFING ADMIXTURE

Article 88A Work Included Under this Item, the Contractor will be required to add an integral waterproofing agent to the concrete on orders of the Engineer. In general, it is expected that all concrete placed in the spillway walls will contain the admixture.

Article 88B Description The admixture is to be added on the job site at the time that the concrete is being mixed. The admixture is to be in either liquid or powder form. It is to be used in accordance with the Manufacturers instructions. It is to be A.C. Hornis Hydratite or approved equal.

Article 88C Payment Payment will be made at the unit price specified in the Contract for each cubic yard of concrete placed with integral waterproofing admixture on orders of the Engineer. Payment under Item 6 is to be in addition to payment under Item 5. Payment under Item 6 will represent only the cost of the admixture.

The Contractors unit price is to include the cost of the admixture and all labor, equipment and materials required for or incidental to its addition to the concrete mix.

ITEM 7

Insulating Concrete

Article 89A Work Included Under this Item, the Contractor is to furnish and place the insulating concrete required around the 24" pipeline in the spillway section as shown on sheet #11 of the Plans.

The item is to include the placing of all mastic. The structural concrete shell is to be furnished and placed under Item 5.

Article 89B Construction The 24-inch pipeline is to be assembled and blocked at the required grade. The 4" vertical shell wall is to be constructed. The mastic is to be applied.

Insulating concrete is to be a mixture of one part of cement to six parts of expanded aggregate similar to Vermiculite or Fonolite. The mix is to have a slump of not less than 6" nor more than 9". Total mixing time is to be approximately 1 minute and overmixing is to be avoided.

The insulating concrete is to be poured or placed on one side of the pipeline and allowed to flow under the pipe until the other side is filled to the spring-line of the pipe. Thereafter concrete may be placed on both sides of the pipeline.

After the concrete has cured for 7 days, the top of the concrete is to be sealed with mastic and the 4" structural concrete cap is to be poured.

Article 89C Payment The Contractor will be paid the unit price specified in his Proposal for each cubic yard of insulating concrete measured in place in the completed work. The Contractor's unit price is to include all labor, equipment, and materials required for or incidental to the Item as herein described.

ITEM 8

REINFORCING STEEL

Article 90A Work Included All reinforcing steel furnished and placed on the Project is to be paid for under this Item.

Article 90B Materials Reinforcing steel used on this job shall be rolled from new billets. It shall be intermediate grade structural steel. Reinforcing shall conform to ASTM Specifications A-305.

Article 90C Cutting and Bending All bars shall be shop cut and bent and shall arrive on the job ready for use. All bars shall be clean and free of rust, oil, grease and other deleterious matter when delivered to the job and shall remain in that condition until incorporated structure.

The Contractor shall submit to the Engineer detailed plans and schedules of the reinforcing.

Article 90D Placement Steel shall be placed in the exact positions and with the spacing shown on the drawings or ordered by the Engineer. It shall be so fastened in position as to prevent being displaced during the placing of concrete. A correct distance between parallel rods shall be not less than the diameter of these rods. Where splices in reinforcement in addition to those indicated are necessary there shall be sufficient lap to transfer by bond the stress in the bar. Rods shall be sufficiently separated or properly connected together in such a manner as to develop the full strength of the rod.

All reinforcement shall be firmly supported by the use of metal bars, spacers, seats or anchors. The use of wood blocks is prohibited. The use of wire ties to hold the steel in correct relationship to the forms should be kept to a minimum. All reinforcement shall be placed on the day prior to the placement of concrete and in no case will the Contractor be allowed to place concrete without the Engineer's approval of the placement of the reinforcing.

Article 90E Measurement Measurement in computing the weights of the bars to be paid for the theoretical weight will be used. Wire or metal clips, seats and other supports necessary to hold the steel in place are not to be considered as a part of the reinforcement and no extra compensation will be given the Contractor for them.

The lengths of the bars to be paid for will be the actual lengths as installed in the work. This length is not to include any waste material due to the fact that the lengths supplied are longer than is necessary for their purpose. Laps and splices as shown on the drawings and other extra metal in laps where authorized will be included in the lengths to be paid for. Laps where allowed by the Engineer and required by the Contractor, in order to facilitate his work, but not a necessary part of the work, will not be paid for.

Article 90 F. Payment The General Contractor will be paid at the unit price specified in his Proposal for each pound of reinforcing steel furnished and placed in the completed work under this item.

The unit price specified by the Contractor in his proposal is to include all labor, equipment and materials required for or incidental to the work under this Item. It shall include all tie wire, seats, spacers, etc., and the labor of placing this material together in the completed work. The field work necessary in order to fit the reinforcing around various openings, recesses, etc., shall not be considered as extra work and will not be paid for as extra work.

The work necessary in the field, in order to fit reinforcement around various openings, recesses or inserts, shall not be considered as extra work and will not be paid for as extra work. The Contractor is warned to include this work of bending and cutting, where necessary, as a part of Item L-M.

ITEM 9

STRUCTURAL LUMBER

Article 91A Work Included Under this item, the Contractor is to furnish and place all lumber required for the spillway bridge, including iron angles, nailing pieces, nails and bolts.

Article 91B Lumber All lumber used on the job, including deck, nailing pieces and side bumpers is to be No.1 structural grade, nominal dimension, planed four sides. Wood is to be Douglas Fir, Yellow Pine or a similar species. All lumber shall be sound, well seasoned, straight grained and free of loose knots, decayed areas or any defect which will impair its strength or durability.

All lumber used is to be treated with creosote by the empty-cell process so that it contains at least 10 pounds of preservative per cubic foot of wood. All preserving is to be done with creosote oil meeting the requirements of AASHO Standard Specifications, Division II, Section 21, Grade I.

All timbers which are cut after the preservative has been applied are to have the cut areas treated with two coats of creosote oil before being installed in the work.

The bridge layout has been planned to use 2 x 8 timbers. At locations where 4 x 8 timbers are specified, the Contractor will be directed to substitute 2- 2x8's nailed together. Decking is to be 2x6 timbers.

Article 91C Fastenings All fastening devices used are to be made of best quality steel and shall be galvanized by the hot-dip method after threading.

The nailing pieces shall be fastened to the beams with a bolt every four feet. Alternate bolts shall be staggered on each side of the web of the beam. Bolt heads shall be counter sunk or otherwise recessed.

The fenders or bumpers shall be fastened using a bolt every four feet. These bolts are to pass completely thru the nominal 14" of material involved. No recessing required for these bolts.

All bolts that are tightened up against wood are to be fitted with a suitable, galvanized iron washer.

Article 91D Nailing All nailing is to be done using galvanized common nails.

The deck boards are to be attached to each beam at 2 locations. Two 40 d nails are to be driven on a slight diagonal at each location. Thus a total of 8 nails will be driven into each deck board.

All other nailing required is to be in accordance with standard practice and as required.

Article 91E Payment The Contractor will be paid the unit price specified in his proposal for each board foot of lumber furnished in place in the completed work as herein specified, including all labor, materials, equipment, bolts, nails and related items required for or incidental to the item.

All measurements of isolated pieces will be based on the actual length and nominal dimensions of the pieces. All measurements for the bridge deck will be based on the actual number of square feet installed and on the nominal thickness of deck installed. No allowance will be made for cut-off pieces or waste.

Included as a part of the cost of the structural lumber is to be the furnishing and installing of the anchor bolts and clip angles at each support. Four $\frac{1}{2}$ -inch diameter anchor bolts are to be furnished and set by the Contractor at each support. A $3 \times 3 \times \frac{1}{4}$ angle is to be set at each support for each main beam. The main beams are to be lagged to the iron angles.

ITEM 10

PIPE RAILS

Article 92A Work Included Under this Item, the Contractor is to furnish and install the pipe rails required for the spillway bridge and at the outer end of the spillway structure. The Item is to include all labor, equipment and materials incidental to the installation of the rails.

Article 92B Description The pipe rails are to be assembled from standard weight wrought iron pipe. All posts are to be spaced not more than six feet on centers and are to be extra heavy wrought iron pipe.

Each post is to be fastened to the supporting material at the bottom by two galvanized bolts. Bolts are to be hot dipped galvanized after threading. If supporting material is wood, galvanized iron washers are to be provided. If supporting material is concrete, L-type anchor bolts are to be set before pouring of the concrete.

Pipe rails on each side of the spillway bridge are to be provided. They are to be fastened by bolting through the 4-inch thick carrying members as shown on Sheet 13 of the Plans. Approximately 60 ft. of rail per side of the foot bridge are to be provided.

A pipe rail approximately 7' feet long is to be provided at the outer end of the spillway for safety in operating the 30" x 36" sluice gate. Anchor bolts are to be cast in the concrete for this pipe rail.

Article 92C Painting No shop painting of these rails is to be allowed. After assembly, the pipe rails are to be wire brushed and all threads and welds are to be spot coated with one coat of Koppers Bitumastic Super Service Black. The entire rails are then to be given two additional coats of the same paint applied at intervals of one week.

Article 92D Payment The Contractor will be paid the unit price specified in his proposal for each lineal foot of pipe rail, furnished in place in the completed work, including all assembly, fastening devices and painting.

ITEM 11

WATER CONTROL EQUIPMENT

Article 93A Work Included Under this item the Contractor is to furnish and install the screens and guides in the intake well.

Also, under this item the Contractor is to install the wall castings or thimbles for the five sluice gates, the gates themselves, stems and operating stands; all parts to be furnished by the Owner.

Article 93B Screens The double fish screens and guides as shown on sheet 11 of the plans are to be furnished and installed by the Contractor. All materials used are to be structural grade aluminum of the sizes shown.

In assembling the screens, the four angles used to form each side are to be beveled and welded at the corners. All corners are to be reinforced by fastening clip angles to the outstanding legs. The two sides of each screen section are to be securely bolted together at 2-foot intervals to hold the screen securely.

The screen is to be 1/4-inch mesh aluminum screen. The wire size is to be #16 gauge or heavier.

Article 93C Sluice Gates The following sluice gates are to be furnished by the Owner and installed by the Contractor.

- (a) Twenty-four inch circular sluice gates with extension stem, three stem guides and hand operated floor stand.
- (b) Sixteen-inch circular sluice gate with extension stem, three stem guides and hand operated floor stand.
- (c) Sixteen-inch circular sluice gate with extension stem, two stem guides and hand operated floor stand.
- (d) Six-inch circular sluice gate with extension stem, three stem guides and floor box.
- (e) Thirty-inch wide by thirty-six inch high, rectangular sluice gate with extension stem, 2 stem guides and hand operated, geared floor stand.

This equipment will be furnished complete, ready for assembly and installation by the Contractor. The equipment includes wall castings for all circular sluice gates and a wall thimble for the rectangular sluice gate. Also to be furnished by the Owner is stainless steel anchor bolts for installation of the stem guides and the floor stands and stainless steel bolts for attaching the sluice gates to the wall castings and thimbles. The Contractor is to supply Johns-Manville, Style 60 asbestos gaskets for the flanged joint between the wall castings or thimbles and the sluice gate.

The Contractor is to place the wall castings and thimbles in the forms prior to the placing of concrete. The castings are to be accurately leveled and plumbed. They are to be securely fastened to the forms and reinforcing steel and braced extremely so as to prevent any movement prior to or during the setting of the concrete.

The L-shaped anchor bolts for the stem guides (3 per guide) and the L-shaped anchor bolts for the floor stands (1 per stand) are to be placed accurately and securely prior to the setting of concrete.

After all concrete has set, the Contractor is to install the sluice gates, stems and floor stands under the supervision of a representative of the Chapman Valve Manufacturing Co. and as directed by the Engineer. When completely assembled, this entire unit is to be in good alignment and shall operate freely.

Upon completion of assembly, all threads and bushings are to be cleaned and lubricated. All portions of the gates, stems, stem guides and floorstands are to be clean and free of dirt, concrete droppings and other such material.

Article 93D Payment The Contractor will be paid the lump sum specified in his Proposal to work of furnishing and installing water control equipment as herein before described. This is to include the 6 sections of screens and the five sluice gates.

The Contractor's lump sum is to include the furnishing of all materials for the screens and guides and the furnishing of the gaskets for assembly of the sluice gates. It is also to include the installation in good working order of all these parts.

ITEM 12

Lock Joint Pipeline

Article 94A Work Included Under this Item the Contractor will lay the 24" raw water line, including fittings, all as furnished by the Owner.

The Owner will furnish the lock joint pipe and fittings including rubber gaskets and diaper cloth. The Contractor, under this Item, will be required to furnish the soap necessary to assemble the lock joint rubber and steel joint, the cement grout, and the gaskets and bolts for the assembly of one 24" flanged joint.

Article 94B Construction Methods The lock joint pipe is to be assembled in accordance with the standard instruction of the Manufacturer. After assembly the joint is to be grouted on the outside and mortared on the inside. Both grout and mortar is to contain a non-shrink admixture.

The pipe is to be laid to the line and grade shown on the plans. The section of pipeline within the spillway is to be supported on hard wood blocks at least two places per length. Portions of the pipeline laid in earth trench are to be supported on granular material. After assembly of the joint and prior to placing of the grout each pipe shall have soil well tamped underneath it and shall be partially backfilled.

The pipeline is to be laid starting at the 24" wall casting at the screen well. Laying is to proceed downstream to the end of the pipeline laid under the filter bed contract. The joint at the 24" wall casting is to be made with braided yarn and hot poured lead. Experienced men are to properly caulk this joint prior to the placing of insulating concrete under Item 7.

The Contractor under Item 12 is to include the cost of installing the closure piece between his pipeline and the pipeline laid under the filter bed contract. This closure piece will be furnished by the Owner and installed by the Contractor. After installation all exposed metal is to be given one coat of Kopper Bitumastic No. 50 and is to be encased or plastered with concrete at least 2" thick. All work in making the closure is to be supervised and directed by a representative of the Lock Joint Pipe Co. and is to be done to the satisfaction of the Engineer.

Upon Completion of the work under this Item, and prior to the placing of the insulating concrete or the concrete encasement and the enclosures, the Contractor is to test the pipeline by filling with water and placing it under 25 pounds of pressure. A visual search for leaks will be conducted.

Article 9hC Flanged Joint At the downstream end of the section pipe to be installed in the spillway, a 24" diameter flange is to be installed. The blind flange, tapped for 1" is to be furnished by the Owner. The General Contractor is to furnish a Johns-Manville Stype 60 asbestos gasket and 20-1 1/4 diameter bolts. After assembly of the flange all exposed metal is to be given one coat of Kopper Bitumastic No. 50.

The Contractor, as a part of the cost under Item 12, is to furnish and install a 1" copperation cock in the line flange. This item is to be extra heavy, all brass similar in quality to Muller, Red Hed, or equal.

Article 9hD Payment The Contractor will receive payment at the unit price stated in his proposal for each linear foot of 24" lock joint pipe furnished by the Owner and laid by the Contractor. The Contractor's unit price is to include assembly of the closurespiece, assembly of the flanged joint, blocking in the spillway and all other labor, equipment and material required for or incidental to the installation.

Excavation will be paid for under Items 3 and 4, as applicable. Backfill will be paid for under Item 20 as applicable.

ITEM 13

Underdrain

Article 95A Work Included Under this Item the General Contractor will furnish and install such underdrainage pipe as is required for the job. This Item applies in particular to the underdrainage pipe laid to relieve uplift on the spillway floor but will be used in the event springs are encountered in the East Side Hill and can be controlled only with drainage pipe.

Article 95B Materials Pipe furnished and laid under this Item is to be 8" vitrified clay pipe, extra strength, perforated and meeting the requirements of A.S.T.M. specified C-200. This pipe is to be laid true to line and grade with particular care exercised to see that the spigot is centered in the bell and that the invert of the various pipe sections are lined up. The bell of each length of pipe is to be filled with jute after the spigot has been inserted. The bells will not require the use of any poured compound.

Stone fill around the pipeline will be furnished and placed under Item 15.

Article 95C Payment The Contractor will receive payment at the unit price specified in his proposal for each linear foot of 8" extra strength, perforated, vitrified clay pipe furnished and laid under this contract as hereinbefore specified. The Contractor's unit price is to include the jute and centering and jointing the various pipe sections.

The Contractor will receive payment under Items 3, 4, 14, and 15 as applicable.

ITEM 14

GRAVEL BORROW

Article 96 A Work Included Under this item the Contractor shall furnish and place all bank run gravel borrow required on the job. This applies especially to the gravel shown as foundation material for the rip-rap on the face of the dam. It is also to include gravel borrow furnished as foundation material for pipes or structures, bank run gravel used as back-fill material on orders of the Engineer and gravel used as foundation material for paved road surfaces. In every case only gravel used within the specified pay lines will be paid for under this item. Any additional gravel borrow required to return the job site to its original condition will be furnished and placed in accordance with these specifications but at the Contractor's expense.

Article 96B Material Gravel borrow will be composed of hard, durable stone and coarse sand, free from loam and clay and when spread and compressed shall present a stable foundation. Materials which tend to be sandy or which fail to compact properly will not be accepted as gravel borrow. The gravel borrow shall be uniformly graded and shall contain no stones having a dimension greater than 4-inches.

Article 96C Placing of Gravel Gravel shall be handled and placed in such a manner as to prevent segregation. It shall be spread on a level, well compacted or undisturbed sub-base. Gravel shall be compacted in layers so as to form a stable and solid base.

Gravel placed as foundation material for the roadway is to be placed on a level, smooth and well compacted sub-grade. The gravel is to be placed in 6-inch layers and well compacted.

Article 96D Measurement Measurement of gravel used on this job is to be based on "load slips". Any gravel furnished and placed on orders of the Engineer is to be substantiated with load slips turned over to the Engineer at the time of hauling of the gravel.

Article 96E Payment The Contractor will be paid the unit price specified in his Proposal for each cubic yard of bank run gravel furnished in place in the completed work. The Contractor's unit price should include furnishing, hauling, spreading, grading and compacting of the gravel and all labor, equipment and materials required for or incidental to the Item.

ITEM 15

UNDERDRAINAGE STONE

Article 97A Work Included Under this item, the Contractor will furnish all stone required for drainage purposes on the entire job. This applies especially to the stone around the drain under the spillway floor but may be used at other locations on the job as directed by the Engineer.

Article 97B Material Washed stone shall be composed of hard durable stone obtained from natural banks or by crushing large stones from natural banks.

Crushed stone shall be composed of hard durable trap rock crushed to the required size. It shall be of the type normally obtained from the local Lane quarries.

The crushed stone or washed gravel shall be free of laminated stones, dust or fine crushings, dirt, clay and all other deleterious materials. It shall be of the size specified by the Engineer for the particular use under consideration. However, the Engineer guarantees to confine his requirements to the normal ranges of size stocked by the various pits and quarries in the area and no special blending will be required.

Article 97C Placing of Material At locations where the use of crushed stone or washed gravel is required by the Engineer, it shall be placed in accordance with his instructions. In general, every effort is to be made to keep the crushed stone or washed gravel free of clogging with native soils so that its use as underdrainage material will not be hampered.

Article 97D Measurement Measurement of stone used on this job is to be based on "load slips". Any stone furnished and placed on orders of the Engineer is to be substantiated with load slips turned over to the Engineer at the time of hauling of stone.

Article 97E Payment The Contractor will be paid the unit price specified in his Proposal for each ton of crushed stone or of washed gravel furnished in place in the completed work. The Contractor's unit price should include furnishing, hauling, spreading, grading and compacting of the stone, and all labor, equipment and materials required or incidental to the Item.

ITEM 16

Rip-Rap

Article 98A Work Included Under this item the Contractor is to furnish and place all rip-rap required for the upstream face of the dam and the spillway channel downstream of the dam.

Article 98B Materials Stone used for rip-rap shall be sound trap rock, cubical in shape, as normally obtained from the nearby Lane quarries. At least three-quarters of the stones furnished shall be more than 15" in their dimension and shall contain 5 cubic feet or more in volume. The remaining stone shall vary in size down to a minimum dimension of 4". The stones shall vary in size so that when placed in the completed work they will form a compact mass not subject to removal by the scour action of the water.

Article 98C Placement The rip-rap is to be replaced on the prepared sub-grade consisting of gravel. The trap rock is to be machine placed in a random fashion. The larger stones are to be placed so that they do not vary from established grade more than plus or minus 6". After the larger stones have been placed, the voids shall be carefully filled with smaller stone in a satisfactory manner. Upon completion of this operation, the embankment is to be covered within the limits shown on the plans with a 2-foot layer of rock, the surface of the rock not varying from the pre-determined requirements by more than 6".

Article 98D Measurement Measurement of rip-rap used on this job is to be based on "load slips". Any rip-rap furnished and placed on orders of the Engineer is to be substantiated with load slips turned over to the Engineer at the time of hauling of rip-rap.

Article 98E Payment The Contractor will be paid the unit price specified in his proposal for each ton of rip-rap furnished in place in the completed work. The Contractor's unit price should include furnishing, hauling, placing and grading of the rip-rap and all labor, equipment, and materials required for or incidental to the item.

ITEM 17

Cast Iron

Article 99A Work Included Under this Item the Contractor is to furnish and install the various cast iron steps and manhole frames required for the job. This is to include the cast iron step, frames, and cover at the screen well and the two cast iron frames and covers used for access to the end of the 24" pipeline in the spillway channel.

Article 99B Materials The cast iron steps used under this contract are to be as shown on the standard detail attached to the rear of these specifications. These steps are to weigh approximately 10 pounds each and are to be of the shape commonly referred to as "Metcalf and Eddy" pattern.

The manhole frame and cover used for access to the clear well and the two manhole frames and covers used as access to the pipeline are designated on the plans using numbers from the Clowe Catalogue. This is used solely to designate the type, size, quality and fastening devices required and is not intended to limit the purchase of these covers to a single manufacturer.

Article 99C Payment The General Contractor will receive payment under Item 17 at the unit price specified in his Proposal for each pound of cast iron to be paid for will be the actual weight of the pieces furnished by the Contractor and approved by the Engineer. The Contractor's unit price is to include all labor, equipment and material required for or incidental to the installation.

ITEM 18

ALUMINUM

Article 100A Work Included Under this Item, the Contractor is to furnish and place the aluminum stop log and guides required at the outer end of the spillway and the aluminum frame and cover required over the screens in the screen.

The aluminum screens, holder and guides in the screen well are to be furnished and placed under Item 11 of this Contract.

Article 100B Materials The items are to be assembled using the stock size plate and bars shown on the plans. The Contractor is to furnish the Engineer with shop fabrication plans showing details of assembly.

All aluminum used is to be a general purpose alloy and heat treat similar to 3003 and is to be suitable for the purpose intended.

Article 100C Payment The Contractor will be paid the unit price specified in his Proposal for each pound of aluminum furnished in place in the completed work as hereinabove specified and as shown on the plans. The weight to be used for payment purposes will be the calculated weight of the assembly. The Contractor's unit price is to include all labor, equipment and materials required for or incidental to the Item.

ITEMS 19 to 22 Inclusive

FILL

Article 101A Work Included Under these Items, the Contractor will haul and place all the fill required for construction of the dam.

In general, all pervious or sandy fill will be obtained from the east sidehill location and operation of this borrow pit will be confined to elevations above elevation 180.

The material in the easterly sidehill above elevation 180 is stratified and ranges from fine gravel and coarse sand to silt with fine sand predominating. Pervious fill hauled from this location without any regard for type of material will be paid for under Item 20.

If suitable layers of select pervious material occur so as to be accessible for removal, the Contractor will be instructed to remove this material for use as designated by the Engineer. Any overburden on these selected layers will be removed under Item 20.

If select granular material is not available or accessible at the borrow pit, its use will be eliminated and gravel under Item 14 will be substituted as directed by the Engineer.

The material in the westerly sidehill is the source of impervious material. In general, there are two types of impervious material available. Directly west of the dam site, there is a "fat" or pure clay available that will be used under Item 22 as the main core of the dam. Underlying this pure clay and also north of the 48-inch culvert is a "boney" hardpan that is to be used in the coffer dams and for the upstream section of the dam marked "semi-pervious" on the plans. This hardpan material is to be used under Item 21 of the Contract.

The Engineer reserves the right to alter the general proportions of select pervious (Item 19), random pervious (Item 20); semi-pervious (Item 21) and impervious (Item 22) materials from that shown on the Plans so as to fit the material actually being used in the construction of the dam.

Article 101B Cofferdams The cofferdams are required for the control of the brook and to allow for the construction of the core of the dam on the native impervious soils. The cofferdams are to be constructed of material furnished and placed under Item 21.

The construction of the upstream cofferdam and rock toe are to proceed across the valley simultaneously. They are to be carried out closely behind excavation for the cofferdams.

After completion of the upstream cofferdam, the contractor will construct the downstream cofferdam. The downstream cofferdam is

to be built regardless of whether or not it is needed for construction purposes since it is an essential part of the dam design.

Article 101C Core Wall The central portion or corewall of the dam is to be constructed using material furnished and placed under Item 22. The area between the cofferdams is to be excavated so as to expose native impervious material. This area is to be dewatered by methods satisfactory to the Engineer. The impervious material is to be placed "in the dry" and compacted under this condition. It is the Contractor's responsibility to provide suitable working conditions for the placement of the core.

Based on boring data, this native impervious material is covered with approximately 5 ft. of sand. The impervious material is a soft and "quakey" material that will not stand any "working" or vibration. Thus the placing of the corewall is to be carried out using considerable care.

First layer of material is to be placed approximately 24-inches thick and all material is to be placed with a free drop of less than 12-inches. This layer of material is to be compacted as directed by the Engineer, probably with two passes of a D-4 or equal dozer.

Subsequent layers of impervious material will probably be placed in 12-inch layers and compacted by not less than 2 passes of a D-7 or equal dozer.

Wheeled vehicles will not be allowed on the corewall until directed by the Engineer. This will probably not be allowed until at least 5 ft. of impervious material have been placed over the native impervious soils.

Article 101D Construction After completion of the cofferdams and the corewall to an elevation at least 5 ft. above the level of the native impervious material and such additional elevation as is directed by the Engineer, the construction will settle down to standard procedure.

All impervious material (Item 22) is to be placed in layers not more than 9-inches thick and compacted by at least 2 passes of a D-7 or heavier dozer. Compaction is to result in the density of the soil 6-inches below the surface being not less than 95% of the Standard Proctor Density. The Contractor will be expected to adjust moisture content and compaction methods as required to attain the required density.

All semi-pervious material (Item 21) is to be placed in layers not more than 12-inches thick. All stone more than 12-inch maximum dimension are to be removed and deposited in place of riprap on the upstream face of the dam. Compaction requirements are to be the same as for Item 22.

All random pervious and select pervious material is to be placed in 12-inch layers and compacted to 90% of Standard Proctor Density. Moisture content and compaction methods to be varied as required to attain the required density.

Article 101D Precautions All construction is to be carried on so as to adequately protect the partially constructed dam from damage.

Construction is to be carried on so that the top of the dam is level in the longitudinal direction. The top of the working area is to be kept crowned with the core always higher than the surrounding sections.

All material in place that has been damaged or softened by rain or frost is to be removed and replaced at no expense to the Owner.

Surfaces are to be roughened, harrowed or otherwise treated prior to the placing of successive layers of soil if so directed by the Engineer. Construction is to be carried on at all times using methods that will prevent stratification and zones of weakness in the completed embankment.

No roots, loam, brush or organic matter is to be incorporated in the embankment.

Article 101E Downstream Plateau Downstream of the dam, a sloping plateau is to be constructed. This is required in the design because of the low strength of the foundation material.

In general, this plateau is to be constructed using material excavated under Item 3. The sandy material is to be placed nearest the dam and impervious material is to be placed farther downstream. Peat and loam stripped from the dam site and from the borrow pit areas under Item 3 are to be used as cover material at this location.

The filter plant contractor has the right to dump excess material in this plateau area. This material will be leveled by the dam Contractor as necessary to provide for work under Item 23.

If necessary, additional material will be provided under Item 20 to bring the plateau to required grade.

Article 101 F Payment The Contractor will be paid the unit prices specified in his proposal for the applicable item for each cubic yard of material removed from the borrow pits, hauled to the dam and deposited in the completed work as herein described. The work is to include all measures required to compact the various soils to the required densities. All measurement of soil is to be made in place in the borrow pit areas.

ITEM 23

LOAM AND SEED

Article 102A Work Included Under this Item, the Contractor will be required to develop the grassed areas on the downstream slope of the dam, on the side slope of the access road from the dam to the treatment plant and on the plateau downstream of the dam. The work will include furnishing of loam as required, spreading of loam, fertilizing and liming, seeding and care of the grassed areas until such time as a strong and adequate growth of grass has occurred.

Article 102B Construction It is anticipated that the major quantity of loam required for the job will be hauled onto the job site by the Contractor.

Any loam required to make up a deficit at the job site is to be obtained by the Contractor under the provisions of this item at a location other than the Bear Hole Water Shed area. In other words, the Contractor will be required to go outside the Watershed area and obtain the loam at some other location.

The construction of the lawn areas is to consist of 2" of mulching and 4" of topsoil, properly limed, fertilized and seeded.

Mulch placed under this contract is to be approximately 2" thick and shall consist of leaves, leaf mold, peat, hay or straw, or a mixture of these materials.

After the spreading and placing of the mulch, the Contractor is to spread 4" of loam on top of the mulch. In the event that sufficient loam is not available at the job site for this amount of loam, the Contractor will be required to haul additional loam from outside sources. Loam shall consist of fertile, friable, natural topsoil typical of the topsoil in the locality. It shall contain a reasonable amount of organic matter and shall be free of stumps, roots, clay and stones. The loam is to be spread in a 4" layer using hand methods and equipment. After the loam has been spread it shall be carefully raked and fine-graded. All large lumps of earth, stones, brush, roots and foreign material are to be removed from the loam area during the fine-grading and satisfactorily disposed of. The loamed surface is to be rolled with a hand roller weighing not more than 100 lbs. per foot of width. In rolling, all depressions that occur are to be filled with additional loam and the surface re-graded and rolled until it presents a smooth and even finish that is up to the required grade.

The loamed area is to be treated with lime. The lime is to consist of pulverized limestone. All pulverized limestone will pass through a #20 sieve and at least 75% of it will pass through a #100 sieve. The ground limestone is to be a product registered for sale in the Commonwealth of Massachusetts. The limestone is to be spread at a rate of approximately 1/2 lb. per square yard and thoroughly raked into the upper portion of the topsoil. After raking in the limestone, the Contractor will be required

to thoroughly wet down the loamed area and at least 3 days are to elapse prior to the application of fertilizer.

After the required time has elapsed, the Contractor is to apply a chemical-type fertilizer having an analysis of 5-10-5 or better. Fertilizer is to be applied at the rate of 1 lb per 100 square feet of loamed area. Fertilizer is to be raked into the surface of the loam using wire rakes. The loamed area is then to be again thoroughly wetted and allowed to stand for approximately 3 days prior to the application of seed.

Prior to the placing of any seed, the Contractor shall lightly rake the surface of the soil to break up any caked or hard areas and to level off any eroded areas. Seed shall be sown only between the periods from April 15 to June 1, and from August 15 to October 15 or as directed by the Engineer. The Contractor shall not proceed with the work of seeding until written permission of the Engineer has been obtained. Where postponement of seeding is necessary and ordered by the Engineer, all weeds and other growth that may develop in the loamed areas are to be removed by the Contractor as directed by the Engineer without additional compensation.

The seed is to be applied at the rate of 1 lb. per 100 square feet. Seed shall be of the previous year's crop. The weed content of the seed shall not exceed 1% by weight. Grass seed shall consist of the following varieties and shall be germinative and pure to the degree by weight as indicated in the following table:

<u>Name</u>	<u>Proportion</u>	<u>Germination</u>	<u>Purity</u>
Red Fescue	60%	70%	85%
Red Top	20%	90%	90%
Kentucky Blue	70%	75%	90%

The Contractor will be responsible for the seeded areas until such time as the work has been officially accepted. During this period the Contractor will be required to water and cut the grass as necessary to develop the growth. If necessary, the Contractor is to erect suitable signs and barriers so as to protect the seeded areas.

After the grass has started, all areas which fail to show a uniform stand of grass for any reason whatsoever, shall be re-seeded and such areas or parts of areas shall be re-seeded repeatedly until all areas are covered with a satisfactory growth of grass.

Article 102C Payment The General Contractor will be paid the unit price specified in his proposal for each square yard of lawn area developed under this contract and within the paylines specified on the contract. The Contractor's unit price is to include the stripping of loam from the existing site, stockpiling

of loam, mulching, spreading of stockpile loam, hauling in of such additional loam as is required, liming, fertilizing, seeding and maintenance of the loamed and seeded areas until final acceptance of the contract. It is the Contractor's responsibility to provide a uniform stand of grass within the areas shown on the plans and described hereinabove and he is expected to take such steps as are necessary to develop and protect this grassed area during the life of this contract. If the Contractor desires to deviate in any manner from the procedures described hereinabove in order to develop the grassed areas, the Contractor is to submit his proposed deviations and changes to the Engineer for approval. Such deviations or changes will be approved by the Engineer providing they do not in any way substantially alter the intent of this specification in providing a well-developed and satisfactory stand of grass.

PROJECT: Local-Water Comm. TOWN W. Springfield - Bear Hole Water Supply Dam

Hoisting Engineer 3.00 (after 9/1/56, 3.10)

Assistant Engineer:

On Steam Machines 2.40 (after 9/1/56, 2.50)

On Other Machines 1.90 2.00

Crane Operator 3.00 3.10

Power Shovel Operator 3.00 3.10

Trenching Machine Operator 3.00 3.10

Tractor Operator 2.55 2.65

Bulldozer Operator 2.55 2.65

Grader Operator 2.55 2.65

220 cu. ft. or less 2.10
Compressor Operator (over 220 cu. ft. 2.55

Jack Hammer Operator 2.15

Roller Operator 2.47 $\frac{1}{2}$ 2.57 $\frac{1}{2}$
1 bag 1.90 2.00

Concrete Mixer Operator 2 or more 2.40 2.50

Pumpman 2.45 2.55

Other Power Driven

Equipment 2.47 $\frac{1}{2}$ 2.57 $\frac{1}{2}$

Bricklayer 3.27 $\frac{1}{2}$ 3.37 $\frac{1}{2}$

Cement Finisher 3.27 $\frac{1}{2}$ 3.37 $\frac{1}{2}$

Stone Cutter 2.25

Stone Mason 3.27 $\frac{1}{2}$ 3.37 $\frac{1}{2}$

Master Mech. 3.10 3.20

Maint. Engineer 2.47 $\frac{1}{2}$ 2.57 $\frac{1}{2}$

Mason Tender 2.15

Catch Basin & Manhole

Builder 3.27 $\frac{1}{2}$ (after 9/1/56, 3.27 $\frac{1}{2}$)

Carpenter 2.77 $\frac{1}{2}$ (after 6/1/56, 2.82 $\frac{1}{2}$)

Pile Driver & Cofferdam

Builder 2.85

Iron Worker 3.38 (after 7/1/56, 3.53)

Painter 2.55

Blaster 2.40

Truck Driver 2.19 $\frac{1}{2}$

Euclid Operator 2.45

Pipe Layer 1.90

Stone Soreader 1.90

Asphalt Raker 1.90

Curb Setter 2.65

Common Laborer 1.90

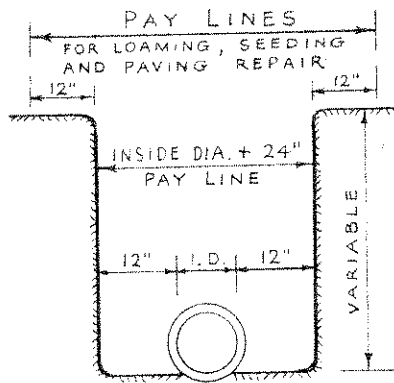
Water Boy 1.00

Electrician 3.05

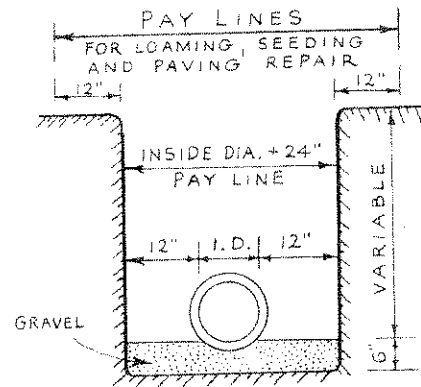
Granite Cutter 3.08

Operator of 3

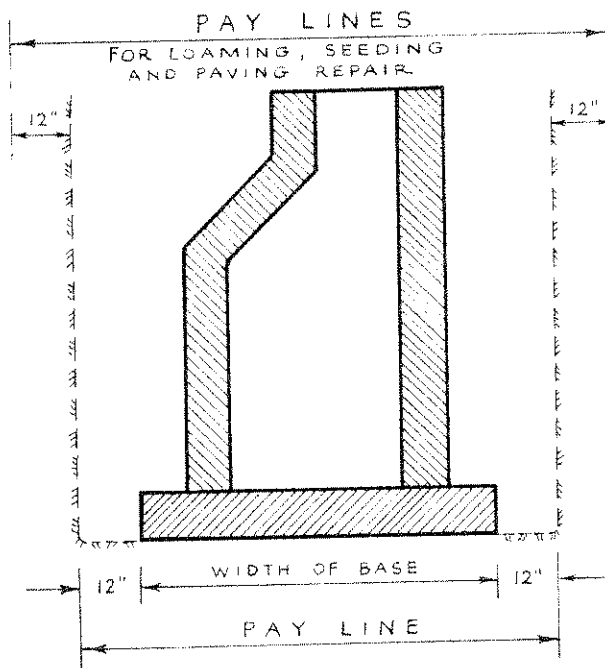
axle equipment 2.25



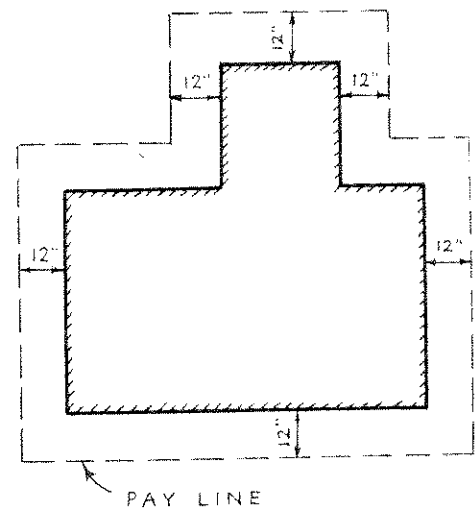
EARTH EXCAVATION
PIPE TRENCH



ROCK EXCAVATION
PIPE TRENCH



SECTION



PLAN

EXCAVATION FOR STRUCTURES

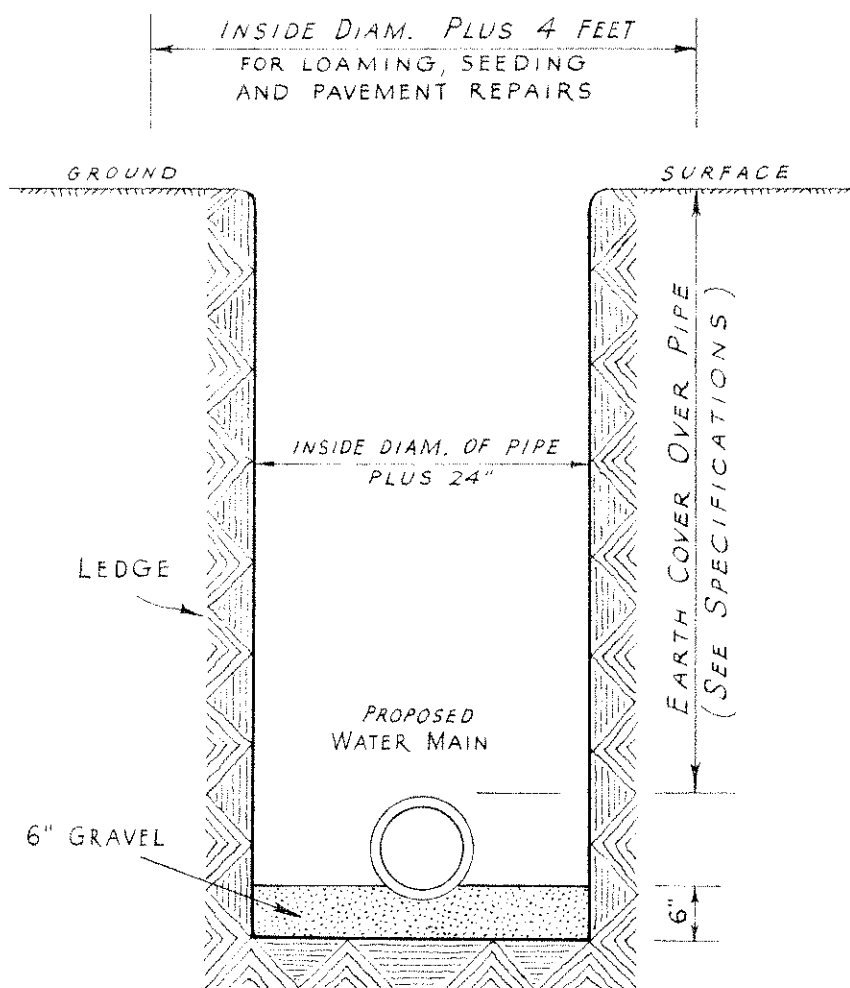
NOTE:

EXCAVATION WILL BE PAID FOR ONCE AND ONLY ONCE, REGARDLESS OF HOW OFTEN IT FALLS WITHIN THE PAYLINES FOR VARIOUS PIPES AND STRUCTURES DUE TO OVER-LAPPING OF PAYLINES AND REGARDLESS OF HOW OFTEN CONTRACTOR RE-HANDLES MATERIAL.

STANDARD DETAILS

PAY LINES

TIGHE & BOND, CONSULTING ENGINEERS
HOLYOKE, MASS.

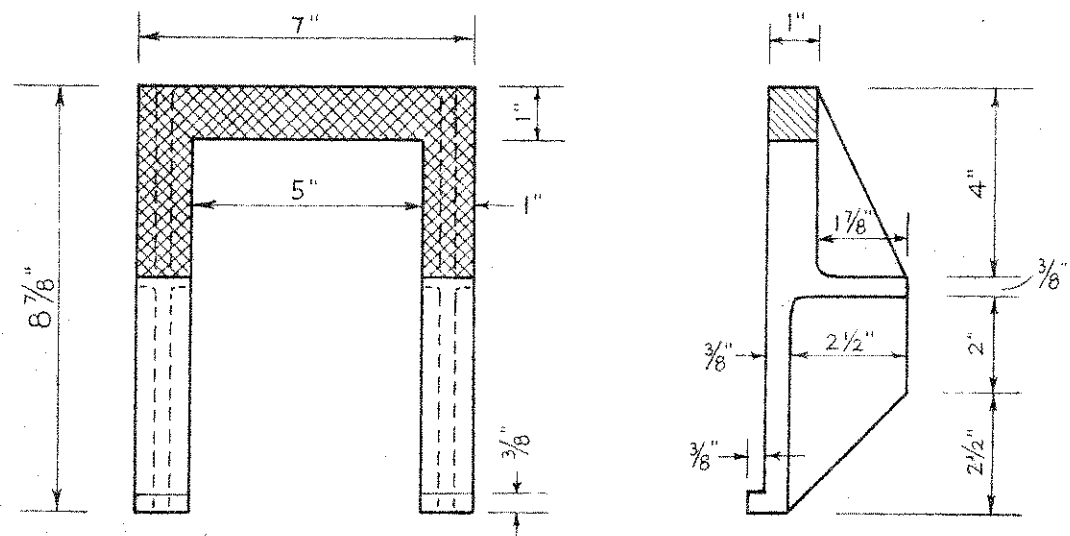


NOTE:

CONTRACTOR WILL BE PAID ONLY FOR
ACTUAL DEPTH OF LEDGE EXCAVATED IN
 CASES WHERE LEDGE IS OVERBURDENED
 BY AN EARTH COVER.

STANDARD DETAIL
 PAY LINES FOR ROCK SECTION,
 PAVING AND LOAMING, ETC.

TIGHE & BOND, CONSULTING ENGINEERS
 HOLYOKE, MASS.



NOTE:

ALL MANHOLE STEPS TO BE CAST IRON,
WEIGHT APPROXIMATELY 10⁰⁰.

STEPS TO BE PLACED 12" APART VERTICALLY,
ALTERNATE STEPS TO BE STAGGERED.

TOP STEP TO BE 12" BELOW TOP OF
THE MANHOLE COVER.

STANDARD
MANHOLE STEP

TIGHE & BOND, CONSULTING ENGINEERS
HOLYOKE, MASS.

CONTRACT



**TIGHE & BOND
CONSULTING ENGINEERS
HOLYOKE, MASS.**

C O N T R A C T

Clause 1. This Agreement, made this _____ day of _____ in the year nineteen hundred and fifty _____, between the

_____ herein referred to as the "Owner", and _____

_____ herein referred to as the "Contractor".

Clause 2. Witnesseth, That the parties to this Agreement, each in consideration of the agreements on the part of the other herein contained, do hereby agree, the Owner, for itself, and said Contractor for himself/themselves and his/their heirs, executors, administrators and assigns, as follows:

The Contractor agrees to furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished and delivered in and about the improvement and to do and perform all work in: _____

_____ in strict conformity with the provisions herein contained and the Advertisement for Bidders and Proposal hereto annexed, and the General Requirements and Special Provisions hereto annexed, and with the plans referred to therein. All said plans, general requirements, special provisions, addenda,

Advertisement for Bidders, and Proposal are hereby specifically made a part of this contract as fully and to the same effect as if the same had been set forth at length herein.

Clause 3. In consideration of the foregoing premises the Owner agrees to pay and the Contractor agrees to receive as full compensation for everything furnished and done by the Contractor under this contract; including all work required but not shown on the plans for the items herein mentioned, and for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any delay or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work as herein specified, and for well and faithfully completing the work, and the whole thereof, as herein provided, such price or prices as are set out in the accompanying proposal, and for

all work required, for which there is no item in the proposal, such compensation as is provided for in the aforesaid specifications.

IN WITNESS WHEREOF, the Owner has caused this instrument to be signed and its corporate seal to be hereto affixed in its behalf, and the Contractor has caused this instrument to be signed in its behalf.

For the Owner,

Witness:

)
)
)
)
)
)
)

By the

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(
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(
(

For the Contractor,

Witness:

By the

Bretton Wood Hills Dam



1949 West Springfield

Dam may be located off Bear Hole Reservoir - overflow brook near the property belonging to Alton Breveleri formerly Hemingway and later J. White.

City/Town	West Springfield
Dam	Bretton Wood Hills Dam
Name	Breveleri, Alton
Name	Lemar, R J
Name	McClaflin
Name	Hemingway
Name	White, J
Name	Bretton Wood Hills
Water	Bear Hole Reservoir

TELEPHONE
8-8075



OLLA N. AMES
PRES. & TREAS.

BRETTON WOOD HILLS

INCORPORATED

182 OHIO AVENUE
WEST SPRINGFIELD, MASSACHUSETTS

September 17, 1949.

Mr. Thomas S. Sullivan, Chairman
Hampden County Commissioners
Court House
Elm Street
Springfield, Mass.

Dear Sir:

As I stated in our recent telephone conversation, we are contemplating building, if there are no complications, a three foot earth dam on our property, which Adams & Ruxton estimated some years ago would hold back from two to three acres of water.

There is a brook running through our property from north to south which is the overflow from Bear Hole Reservoir.

Near the south bound of the property is another smaller brook, or drainage ditch, which enters this first brook. Into the smaller brook enters surface drainage water from approximately two thousand or more feet of surface drain sewer. After it leaves our property it flows through land belonging to Alton Breveleri, (now or formerly of McClafflin) and land belonging to R. J. Lemar (formerly of Hemingway) and later of J. White, a distance of about 910 feet. From there it crosses Sibley Avenue and flows into the Westfield River several hundred feet beyond. Most of this land through which the storm water flows is vacant, unused land.

An old plan of our property is filed in the Hampden County Registry of Deeds and was drawn by Steele Bros. in Jan. 1931. I am sorry I can't tell you the book and page. It bears the name "Bretton Woods" and my own name, "Olla N. Ames."

At the time the town was looking for a new water supply they took borings within about seventy-five feet of the proposed location of the dam and I think the bottle showing the composition of the soil is still in the office of the West Springfield Water department on Piper Road.

In the office of the Town Engineer is a topographical map of this section. Another one is on file in the office of Ganley & Crook, attorneys.

I am enclosing a rough sketch of the property through which flows the brook that we would like to dam. The resulting lake would be used for skating in winter and bathing in summer and would have one spot deep enough for diving. It would be owned by The Bretton Wood Hills Club, composed of property owners in Bretton Wood Hills, our sixty acre real estate development at the end of Ohio Avenue, and by residents of the surrounding neighborhood.

I understand you have maps in your office which cover much of the information I have given you. You undoubtedly know that to the west of the proposed site of the dam is a large sand bank which is on the property of B.W.H. Inc. and perhaps you also know the composition of the soil in this section with out going out of your office.

Will you be kind enough to let me know as soon as possible if such a dam is permissable and if so what would be the requirements. We would greatly appreciate any helpful information your commission and its engineers can give us.

Very truly yours,

Olla N. Ames

President and Treasurer

Bretton Wood Hills, Inc.

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

September 26, 1949

Mr. Thomas E. Sullivan, Chairman
Hampden County Commissioners
Court House
Springfield, Mass.

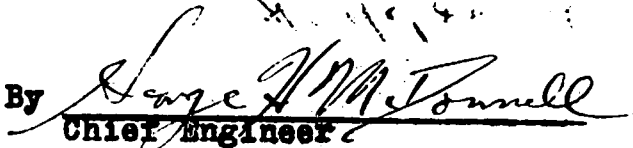
Dear Sir:

Enclosed please find letters and
map which we are returning to your office
as requested.

Will contact the persons concerned
in both these cases, and discuss their
requests with them.

Very truly yours,

Tighe & Bond

By 
Chief Engineer

- (1) G.H. Stenner, Sterling Radiator Co., Inc., Westfield, Mass. Would like to build a dam on his property in Granville, Mass.
- (2) Olla N. Ames, President and Treasurer, Bretton Wood Hills, Inc., 182 Ohio Avenue, West Springfield, Mass. Would like to build a dam on their property in West Springfield.

JAMES L. TIGHE
PHILIP E. BOND

TELEPHONE
HOLYOKE 5525

TIGHE & BOND
CONSULTING ENGINEERS
189 HIGH STREET
HOLYOKE, MASSACHUSETTS

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
WATER POWER
DAMS

September 29, 1949

The Hon. The Board of County Comm'rs
Hampden County Court House
Springfield, Mass.

Attn: Thomas F. Sullivan, Chm.

Gentlemen:

Enclosed is a copy of a letter
sent to Olla N. Ames, Bretton Wood Hills,
regarding her letter of September 17, 1949,
to your Board.

Very truly yours,

Tighe & Bond

By George H. McNeill
Chief Engineer

September 30, 1949

Olla N. Ames
President and Treasurer
Bretton Wood Hills, Inc.
182 Ohio Street
West Springfield, Mass.

Re: Your communication
September 17, 1949, to
Hampden County Comm'rs

Dear Madam:

I have examined the site of the proposed dam and pond as described in your letter of September 17, 1949.

The proposed development and construction of the dam must fall within one of the following classifications in order to come under the jurisdiction of the Hampden County Commissioners.

1. The dam must be ten feet or higher.
2. The pond must contain one million gallons or more.
3. The drainage area above the dam must contain one square mile or more.

A study of the drainage area indicates that there is less than one square mile above your proposed dam site. The dam, as described in your letter, will be less than ten feet in height. If the water impounded behind the dam does not exceed one million gallons, you will not be required to file plans for County approval. However, if the proposed pond is to contain more than one million gallons, it will be necessary for you to petition the County Commissioners for a permit to build the dam, and also file plans of the proposed structure for approval, prior to its construction.

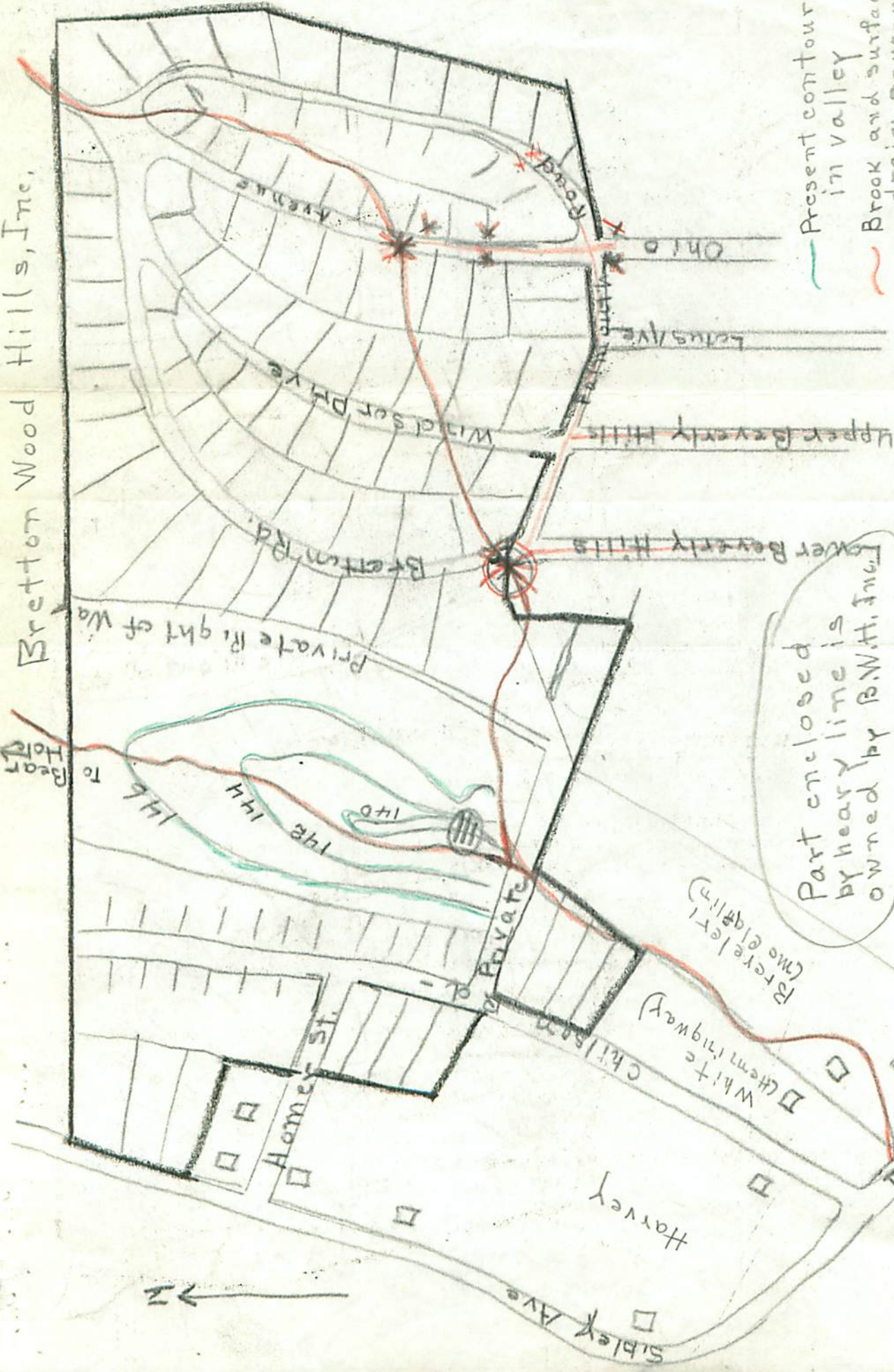
Very truly yours,

TIGHE & BOND

By

L. M. Donnell

Bretton Wood Hills, Inc.



Part enclosed
by heavy line is
owned by B.W.H. Inc.

- Present contour lines in valley
- Brook and surface drain sewers
- * Entrance for 5 catch basins
- * Entrance for 1200 ft of surface drain
- * Catch basins
- ⊖ Proposed dam

Submitted by Sept. 17, 1949
Bretton Wood Hills, Inc.
Ollan Ames, Pres.
182 Ohio Ave. W. Sp.

→

To Westfield
River

Drobat Dam



o West Springfield

Also see: Dam Report Section - West Springfield.

City/Town West Springfield

Dam	Drobat Dam
-----	------------

WEST SPRINGFIELD
D22005

DROBAT DAM

D22005

NO IMAGE ON FILE FOR THIS RECORD

(INFORMATION EXISTS ONLY ON A FILE CARD FROM THE
OFFICE OF THE FORMER HAMPDEN COUNTY ENGINEER.)

Kneip Dam



1926 West Springfield

Located on Bagg Brook.

City/Town	West Springfield
Dam	Kneip Dam
Name	Kneip, Frank
Water	Bagg Brook

Frank Kneip

53 Cayenne St.,

West Springfield, Mass.

you are notified that your dam, located on Bagg Brook so called in the Town of West Springfield, etc.

"The dam is a very small structure which forms a shallow ice or fish pond that covers not over one-third of an acre. For this reason, no future inspection of the structure will be necessary because even should it fail, no damage would be done by the released water. If, however, it is to the interest of the owner to maintain the pond, the dam should be repaired around the spillway and the embankment raised another foot above the crest of the spillway."

March 24, 1926

Mr. Frank Kneip,
53 Cayenne St.,
West Springfield, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on Bagg Brook so-called in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him:

"The dam is a very small structure which forms a shallow ice or fish pond that covers not over one-third of an acre. For this reason, no future inspection of the structure will be necessary because even should it fail, no damage would be done by the released water. If, however, it is to the interest of the owner to maintain the pond, the dam should be repaired around the spillway and the embankment raised another foot above the crest of the spillway."

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

Farnsworth Dam



o West Springfield

Also see: Dam Report Section - West Springfield.

City/Town West Springfield

Dam	Farnsworth Dam
-----	----------------

WEST SPRINGFIELD
D22007

FARNSWORTH DAM

D22007

NO IMAGE ON FILE FOR THIS RECORD

(INFORMATION EXISTS ONLY ON A FILE CARD FROM THE
OFFICE OF THE FORMER HAMPDEN COUNTY ENGINEER.)

Lyncoosky Dams



1933 West Springfield

Upper and Lower Dams located on Wolf Swamp Brook upstream from West Springfield High School.

Abutters	West Springfield High School
City/Town	West Springfield
Dam	Lyncoosky Dams
Name	Lyncoosky, Felix
Name	Lyncoosky, Fred
Streets	Piper Road
Water	Wolf Swamp Brook

May 3, 1933

Mr. Felix Lyncosky,
573 Piper Road,
West Springfield, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on Wolf Swamp Brook, so called, in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

"The concrete facing wall of the dam is being overturned by the pressure of the earthen embankment behind it. If the pond is to be maintained this wall should be strengthened, and repairs should be made around the overflow where some of the embankment has washed out. If it is not intended to maintain the pond then an opening should be made through the dam for the passage of the brook."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____ Chairman.

November 26, 1952

Mr. Fred Lyncosky
573 Piper Road
West Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located near your home and westerly of Piper Road has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"A paved depression should be made on the road crossing the dam on natural undisturbed soil. This depression or through could be paved with asphalt, stone, packed gravel or concrete and would act as an emergency overflow should the pipe overflow thru the dam become blocked or overloaded."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman

Lyncosky Dam. W. L. Lyle

September 22, 1953

Mr. Fred Lyncosky
573 Piper Road
West Springfield, Massachusetts

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located near your home and westerly of Piper Road has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"The swale spillway previously recommended has not been constructed. It would seem advisable to construct this trough type of spillway by forming a small channel across the road on the dam where natural soil conditions exist. This trough would be shallow so that motor vehicles could pass over it without bridging and it could be paved with either stone or masonry."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman

Dec. 8, 1954

Mr. Fred Lyncosky
573 Piper Road
West Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et. seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of dams of Hampden County, you are hereby advised that your dam located near your home and westerly of Piper Road, has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"The emergency pipe spillway constructed with the use of old oil drums is partly plugged with pipe and other material located within the oil drum overflow. A proper emergency spillway should be provided by either constructing a more solid and lasting pipe overflow or by the construction of a swale spillway.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

COUNTY COMMISSIONERS

By _____
Chairman

CD W. Spfld
Sept. 17, 1957.

Mr. Fred Lyncoosky
573 Piper Road
West Springfield, Mass.

Dear Sir:

This will confirm my conversation with you at the site of your proposed pond in West Springfield on Friday afternoon, Sept. 6, 1957. The location of the proposed pond is just upstream of the new West Springfield High School on your property in the vicinity of your gravel borrow pit. The location is on the head waters of Bagg Brook. This brook flows under Piper Road and thru the property of the Springfield Country Club.

The pond that you proposed to form is on a drainage area of less than one square mile. The height of the dam you propose is considerably less than 10 ft. above natural ground level. The volume of the pond is to be obtained by excavation rather than by impounding the full quantity of water behind the proposed dam. The size of the pond as planned will be approximately 350 ft. by 150 ft. and the depth of water above natural ground level will probably not exceed 2 ft. Consequently, the quantity of water impounded by the dam itself will only be in the neighborhood of 800,000 gallons.

Since the proposed dam is on a drainage area of less than one square mile, since the height of the dam is totally less than 10 ft. and since the quantity of water to be impounded by the proposed dam is less than one million gallons, the structure as proposed will not come under County jurisdiction. You may proceed with the construction of your dam and pond providing that the structure is kept within the size limits described at our conference in the field.

If for any reason you decide to increase the quantity of water to be stored, kindly call or write the undersigned for a review of the proposed construction.

If I can be of assistance to you at any time in connection with advice regarding the proposed dam and pond, please do not hesitate to call upon me.

Very truly yours

W. McDermott County

December 21, 1966

Mr. Frick Lyncosky
573 Piptoad
West Springfield, Massachusetts

Dear Mr. Lyncosky:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of dams of Hampden County, you are hereby advised that the lower of two small dams located on your property and just upstream from the West Springfield High School, have been recently inspected by our Engineer and your attention is called to the following conditions noted at the low of the two dams together with the recommendations made by him.

"The embankment of this dam was found to be in relatively good condition. A good growth of turf exists on both slopes around the top of the embankment. No brush cover whatsoever was noted. Toe seepage does occur but the amount of seepage noted was normal for this small dam.

On the day of inspection, water level was at the crest of the masonry spillway inlet. The wooden and screen inlet rack was noted to be in satisfactory condition.

The spillway tube discharge apron is becoming undermined and this masonry apron should be repaired in the coming year."

The work of repairing the undermined apron downstream of the discharge pipe should be done during the coming year to prevent further damage being done. By making repairs in the coming year, you can prevent the need for much more expensive repairs at a later date. The job to be done now is relatively small and can be done with little effort and a minimum of materials.

If there is any further information you desire in connection with this matter, please call or write the undersigned.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

GEORGE H. McDONNELL
ANDREW W. GIBBON
ANDREW E. HAYON

**TIGHE
& BOND**

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL JEFFERSON 3-3591

CD West Springfield
March 18, 1969

Mr. Frederick Lyncosky
573 Piper Road
West Springfield, Massachusetts

Dear Sir:

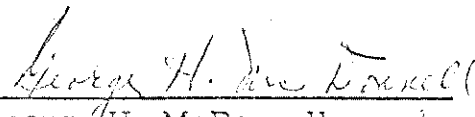
Reference is made to your lower dam just above school property in West Springfield, and the fact that there now exists a heavy snow cover throughout Western Massachusetts. The water content of this snow cover, coupled with a warm spring rain could result in extremely heavy runoff conditions. Consequently, the Commissioners of Hampden County have directed that I advise you to be sure that the spillway facilities at your dam are clear of any obstruction and that you take all precautions necessary to protect your dam as well as persons and property downstream.

Maximum spillway capacity should be made available by removing any flashboards or bar racks which could serve to reduce the rate of discharge from the pond and cause a substantial increase in the elevation of the water surface should flood flow conditions occur. The dam should be inspected frequently during the time of heavy runoff and any action taken which might be necessary to maintain maximum spillway capacity.

If you release any stored water, be sure that the release is done slowly so as not to cause any temporary flooding downstream.

If you have any question in connection with this matter, the undersigned can be reached at the above address and telephone number.

Very truly yours,


George H. McDonnell
County Hydraulic Engineer

GHM/amd

Mittineague Park Dams



1950 West Springfield

Upper and Lower Dams located in Mittineague Park.

Abutters	Mittineague Park
City/Town	West Springfield
Dam	Mittineague Park Dams
Name	West Springfield Town Park & Playground Commission

October 18, 1950

Park and Playground Commission
Town of West Springfield
Town Hall
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your lower dam in Mittineague Park located on Block Brook has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him:

"Stop planks and flash boards are set in the dam to an elevation approximately equal to the top of the abutments. It is evident that the overflow has been passing over the abutments and some of the soil downstream has been washed out. Continuation of this practise may eventaully cause damage to the structure. If the flash boards are to be maintained, protective work should be done downstream from the dam abutments."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By _____

Chairman

July 25, 1951

Park and Playground Commission
Town of West Springfield
Town Hall
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dams in Mittineague Park, located on Block Brook, have been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

Upper Dam - "Erosion is taking place under the paved cobble toe of the downstream apron. Repairs would be advisable before additional damage is done to the apron."

Lower Dam - "Stop planks and flash boards are set in the dam to an elevation approximately equal to the top of the abutment. It would be advisable to remove at least one and preferably two of these boards, in order to concentrate the overflow in the stream bed area. If the flash boards are to be maintained at their present height, protective work should be done downstream from the dam abutment."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

By William F. Stapleton
Chairman

Thomas F. Sullivan

Francis M. O'Keefe - Acting County
Commissioner

Mittineague Park Dams

Dec. 8, 1954.

Park & Playground Commissioners
Town Hall
West Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dams located in Mittineague Park have been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

A. Mittineague Park Dam, West Springfield, Mass.

UPPER DAM. The concrete and cobble stone apron, located immediately downstream of the dam is undermined. This apron should be repaired and properly protected from further damage.

LOWER DAM. The right abutment paving downstream of the dam is undermined. This should be repaired and corrective action taken to prevent further undermining. The flash boards should be removed from the dam for the Winter.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

COUNTY COMMISSIONERS

By _____
Chairman

Fossa Dam



1926 West Springfield

Located on Darby Brook.

City/Town	West Springfield
Dam	Fossa Dam
Name	Fossa, Peter
Streets	Kings Highway
Streets	Elm Street
Water	Darby Brook

Peter Fossa,

418 Riverdale St.,

West Springfield, Mass.

you are notified that your dam,
located on Lantry Brook as called in the Town
of West Springfield, etc.

"In order to increase the
factor of safety of the structure against
flood flow toppling the dam, it is recommended
that a surface overflow in the form of
a paved swale or gutter be placed near
or at the end of the dam. The owner,
when the matter was explained to him,
saw that if such were done, it would
increase the safety of the structure."

Now, therefore, etc.

February 17, 1926

Mr. Peter Fossa,
418 Riverdale Street,
West Springfield, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on Darby Brook, so-called, in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

"In order to increase the factor of safety of the structure against flood flow topping the dam, it is recommended that a surface overflow in the form of a paved swale or gutter be placed near or at the end of the dam. The owner, when the matter was explained to him, saw that if such were done, it would increase the safety of the structure."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendations be complied with in a reasonable time.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

November 17, 1926

Mr. Peter Fossa,
418 Riverdale Street,
West Springfield, Mass.

Dear Sir:

Inasmuch as your dam was inspected quite recently by our Engineer who found that no repairs had been made thereon, your attention is called to the notice sent to you on Feb. 17, 1926 of which a copy is herewith enclosed.

In case you would like further information regarding the repairs required than that contained in notice, should you communicate or call upon our Engineer, James L. Tighe of the firm of Tighe & Bond, 189 High St., Holyoke, Mass., he will be glad to advise you.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

C/H
Enc.

May 10, 1933

Mr. Peter Fossa,
418 Riverdale Street,
West Springfield, Mass.

Dear Sir:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on Darby Brook, so called in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following recommendation made by him;

"To increase the factor of safety of the dam against being topped by flood flows it is recommended that there be provided in the top of the embankment either an additional overflow culvert or a surface overflow swale. Either one of these could be built at the north end of the dam, discharging into the channel located at that point."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairmen.

October 18, 1950

Mr. Peter Fossa
1 Fossa Heights
West Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam, located near Elm Street and Kings Highway in West Springfield, has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him:

"The emergency overflow pipe is approximately one-half plugged with traprock chips at its inlet end, and should be cleaned."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman

Springfield Country Club Dam



1933 West Springfield

Located on Wolf Swamp Brook at the Country Club off Piper Road in West Springfield. See also: County Roads Plan #15 (1960) "Dam - Springfield Country Club".

Abutters	Springfield Country Club
City/Town	West Springfield
Dam	Springfield Country Club Dam
Name	Kendall Dam, P B
Name	Bagg, Aaron
Streets	Piper Road
Water	Wolf Swamp Brook

May 17, 1933

Mrs. Aaron Bagg,
Riverdale Street,
West Springfield, Mass.

Dear Madam:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on Wolf Swamp Brook, so called, in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following condition noted and recommendation made by him;

"It is recommended that the flash boards on the spillway be cut down to at least one and half feet in height during all seasons of the year except in the dry summer months."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendation be complied with.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

May 24, 1933

Mr. George W. Hayden,
426 Riverdale Street,
West Springfield, Mass.

Dear Mr. Hayden:

In reply to your question as to when is the right time to do the work on the dam located on Wolf Swamp Brook, owned by Mrs. Aaron Bagg, our Engineer states that the work can be done any time between May 15th and October 15th, 1933.

We are returning the letter herewith.

Very truly yours,

COUNTY COMMISSIONERS

By _____ Chairman.

C/N

November 26, 1952

Mrs. Aaron Bagg
840 Riverdale Road
West Springfield, Mass.

Dear Mrs. Bagg:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located at the Country Club off of Piper Road in West Springfield has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"The brick and concrete masonry of the overflow culvert carrying the roadway and also supporting a portion of the earth dam is in poor condition. Bricks have fallen out of place and others are on the verge of collapsing. To view this condition one must enter the culvert under the road. The structure should be strengthened and repaired."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman

Country Club Dam, W. Apple

185 Rogers Avenue,
West Springfield, Massachusetts,
December 2, 1952.

The County Commissioners,
Springfield, Massachusetts.

Gentlemen:

Your letter of November 26th to Mrs. Aaron Bagg, 840 Riverdale Street, West Springfield, has been referred to me as one of the new owners of the dam located at the Country Club off Piper Road in West Springfield. The Commissioners' recommendation in regard to the dam has been reported to the Country Club, lessors of the property, and will receive their prompt attention.

Very truly yours,

Phyllis B. Kendall
(Mrs. W. L. Kendall)

Phyllis B. Kendall,
(Mrs. W. L. Kendall)

A copy of this letter was mailed to County Hydraulic Engineer, George H. McDonnell.

COPY

GD W. Spfld
Sept. 17, 1957

Springfield Country Club
West Springfield, Mass.

Att: Supt. of Grounds

Gentlemen:

An inspection was made of the dam on Country Club property just off of Piper Road and it was noted that certain improvements and changes have been made to this flood damaged dam so that in the opinion of the undersigned the structure is now impounding at least one million gallons of water. Conditions at the dam are such that the structure undoubtedly comes under County jurisdiction.

Since last inspected by the undersigned the height of water impounded has been increased and a wooden dam and spillway has been constructed. According to the Laws of the Commonwealth of Massachusetts, relating to dams, plans and specifications of any construction on a dam coming under County jurisdiction must be on file and the work of construction on the dam must be in accordance with approved plans and specifications.

The undersigned would like to meet with a representative of the Springfield Country Club, as soon as possible, to discuss this dam and spillway and to make arrangements to either have the structure rebuilt in accordance with approved plans and specifications or to have the structure lowered to an elevation whereby the stored water will be less than one million gallons and the height of the dam be less than 10 ft. above stream bed.

Will you kindly call or write the undersigned at the above address? Since I am out of the office during many hours of the work day, I can best be reached by phone before 9 AM each morning or at about 5 PM in the afternoon.

Very truly yours

George H. McDonnell
County Hydraulic Engineer

GHM/cmb

WATER SUPPLY
SEWERAGE
SEWAGE DISPOSAL
STRUCTURAL ENGINEERING
ELECTRICAL ENGINEERING

TIGHE & BOND, Inc.
CONSULTING ENGINEERS
BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

GEORGE H. McDONNELL
PHILIP W. SHERIDAN

DAMS & POWER INSTALLATIONS
HIGHWAYS & BRIDGES
HOUSING DEVELOPMENT
WASTE DISPOSAL

GD-48
Oct. 4, 1957

The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Gentlemen:

Reference is made to our recent communication regarding the dam at the Springfield Country Club located in West Springfield. A copy of my letter to the Country Club dated September 17, 1957, was sent to your Board for your record and files.

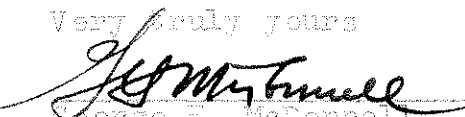
On Oct. 3, 1957, the undersigned met with Atty. Buckley, Mr. Griffin, Committee Members at the Country Club and with the Groundkeeper to review the situation at the dam and to discuss the necessary work so that the dam will meet modern day standards.

The representatives of the Country Club agreed that during the coming winter months the problem of providing a proper dam and spillway will be taken up by the Country Club and that a solution satisfactory to all will be reached.

In the meantime, the pond will be emptied by the end of this month and kept empty for the remainder of the Fall, Winter and Spring season. By that time a satisfactory solution to providing an adequate spillway will probably be reached by the Country Club officials.

The above is submitted to you for file purposes in connection with this dam.

Very truly yours


George H. McDonnell
County Hydraulic Engineer

GDH/cmb

CD-WS
Oct. 4, 1957

The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Gentlemen:

Reference is made to our recent communication regarding the dam at the Springfield Country Club located in West Springfield. A copy of my letter to the Country Club dated September 17, 1957, was sent to your Board for your record and files.

On Oct. 3, 1957, the undersigned met with Atty. Buckley, Mr. Griffin, Committee Members at the Country Club and with the Groundkeeper to review the situation at the dam and to discuss the necessary work so that the dam will meet modern day standards.

The representatives of the Country Club agreed that during the coming winter months the problem of providing a proper dam and spillway will be taken up by the Country Club and that a solution satisfactory to all will be reached.

In the meantime, the pond will be emptied by the end of this month and kept empty for the remainder of the Fall, Winter and Spring season. By that time a satisfactory solution to providing an adequate spillway will probably be reached by the Country Club officials.

The above is submitted to you for file purposes in connection with this dam.

Very truly yours

GHM/cmb

George H. McDonnell
County Hydraulic Engineer

Dec. 31, 1958

Springfield Country Club
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dam located on your Country Club property in West Springfield has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"This dam is still in the same general unsafe and unsatisfactory condition previously reported. The dam should be either removed from the stream and a free waterway made for the passage of the brook or a proper dam based upon approved plans and specifications should be built and maintained in accordance with the requirements of the law.

Since the drainage area involved is less than one square mile, the owners could build a dam that would be outside of the County jurisdiction if the dam impounded less than 1,000,000 gallons of water and its maximum height would be less than 10 ft. from the bed of the brook at the downstream toe of the dam. "

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

Jan. 15, 1958

Springfield Country Club
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located on your Country Club property in West Springfield has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"During the past year, a spillway was built in the breach caused by the flood of August, 1955. This spillway was made of stones, earth, and planking. It is a poor spillway and it does not have satisfactory capacity nor is it properly constructed. The undersigned has met with representatives of the Country Club and they agreed to drain the pond and cease ponding of water until proper action could be taken in connection with repairs to the dam. When last inspected, the pond was found to be be drained. It is recommended that before the pond is refilled proper plans and specifications for a spillway be prepared and filed with the County for review and approval. The spillway should then be constructed in accordance with the approved plans. If the pond is to be used in 1958, the spillway construction should be planned immediately and the work built in the coming spring.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

January 6, 1960

Springfield Country Club
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam, located on your Country Club property in West Springfield has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"This dam has never been completely and properly repaired since the flood of August, 1955. A small wooden and earth filled dam was constructed in the breach of the original dam. In the past, it has been recommended that the dam installed in the breach be removed to provide a free waterway or a proper dam be constructed.

During the heavy rainstorms of this past Fall, the small wooden and earth fill dam was washed out. As of the end of this year, a free waterway remains thru the breach of the original dam and no water is ponded. The Owner should be notified that no reconstruction of a dam should take place at this location, without first filing plans and specifications, as required under Chapter 253, of the General Laws."

This Board concurs in the recommendations contained in the report of the Engineer. If a dam is to be reconstructed at the site of the old dam and if the structure is to be 10 ft. high or higher or if it is to impound 1,000,000 gallons of water or more, it is essential in accordance with Chapter 253 of the General Laws of Mass. that plans and specifications of the proposed construction be filed with our Board for approval.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

Nov. 7, 1960

The Hon. the Board of County Commissioners
Hampden County Court House
37 Elm Street
Springfield, Mass.

Gentlemen:

In accordance with your request, I have reviewed a set of plans containing two sheets and showing the proposed construction of a dam to be built at the site of the existing dam on property of the Springfield Country Club in West Springfield, Mass. The plans were filed on Nov. 2, 1960 and are identified as Drawings No. D-60154-1 and D-60154-2. The drawings are dated Oct. 6, 1960 and were prepared by Gieschi & O'Neil, Engineers of North Wilbraham, Mass. The specifications consist of 8 sheets including a title sheet. The specifications were filed Nov. 2, 1960 and are entitled "Construction Specifications for Dam and Overflow Intake on property of the Springfield Country Club, in the Town of West Springfield, Mass." The specifications are dated Oct. 7, 1960 and were also prepared by Gieschi & O'Neil, Engineers of North Wilbraham, Mass.

The proposed construction provides for permanent repairs and improvements to the old dam on property of the Springfield Country Club in West Springfield, damaged during the hurricane of August, 1955. Temporary repairs had been made to the dam by partial closure of the breach with a make-shift wood and earth overflow. This overflow produced a very small pond and as such did not come under County jurisdiction. The temporary repairs were seriously damaged during time of heavy storm runoff in 1959.

As now planned the Springfield Country Club will restore the dam to its original height and will provide additional spillway capacity by the construction of a 5 ft. diameter spillway tube and concrete inlet structure. The tube will extend thru the embankment to be built in the breached area of the dam.

The drawings propose the installation of a steel sheet piling cutoff wall to a depth of 8 ft. below the embankment foundation. One method for building the embankment calls for the sheeting

-2-
Nov. 7, 1960

to be extended into the foundation and to a grade equivalent to the top of the new overflow tube. Above the overflow tube and around the tube, as well as in the embankment adjacent to the tube, a core of impervious compacted material would be used to make the embankment water-tight. A second proposal provides for a complete steel sheeting corewall thru the entire proposed embankment construction and to a grade of very nearly the top of the embankment.

The concrete intake structure has an inside dimension of 7 ft. x 7 ft. It is square and is planned to be built of reinforced concrete. No provision is made for flashboards on the new spillway intake.

The old spillway will still function. It will be repaired and serviced as necessary.

The upstream and downstream embankment surface will have a slope of two horizontal to one vertical. Slopes will be stabilized with loam and seed.

Riprap will be placed at the downstream toe of the proposed embankment at a point adjacent to the new tube overflow outlet.

The specifications provide a proper description for the materials and for the required degree of workmanship.

The added spillway capacity will provide sufficient overflow capacity to the dam to care for high rates of runoff from the drainage area.

On the assumption that the work will be carried out with care and in accordance with the requirements of the plans and specifications as filed, it is recommended that the plans and specifications be approved.

Respectfully submitted

GHM/cmb

George H. McDonnell
County Hydraulic Engineer

CD West Springfield
April 26, 1961

Springfield Country Club
West Springfield
Mass.

Att Committee on Construction of Dam

Gentlemen

A recent inspection of the completed dam on your property in West Springfield indicates that certain work remains to be done to provide a stable embankment and a safe dam. On the downstream side of the new embankment, between the new spillway tube and the old masonry spillway, it was noted that the embankment material was very wet and showed evidence of sliding due to this wet condition. It appeared as if further slides will take place and a failure of the portion of the embankment involved may occur unless protective measures are taken.

The moisture in the embankment is probably the result of precipitation directly on the embankment coupled with the necessary steep slope because of the lines and grade of the old spillway masonry. The condition could also be the result of seepage occurring along the vicinity of the old spillway stone work. Also, the embankment material is not the type best suited for this construction since it is relatively fine and will tend to slide when wet.

It is recommended that corrective action be taken by the placing of additional material on the downstream face of the embankment to replace the soft earth now existing. Broken stone about 2 inches in size, or jingle stone, would be suitable for use in this location. The placing of this material is not a guarantee that the problem will be solved. However, the method recommended is economical and may solve the problem of handling seepage and maintaining a stable embankment.

CD West Springfield
April 26, 1961

The only other solution would be to draw down the pond, excavate into the embankment and replace the embankment material with a well-packed impervious fill near the center of the embankment and a well-graded sand to gravel material towards the outer face.

The undersigned would be pleased to meet with your engineer or your contractor in connection with this final work needed to make the dam safe and acceptable.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/f

CD W. Spfld
April 26, 1961

The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Massachusetts

Gentlemen:

Enclosed, for your information and file purposes, please find a copy of a communication sent to the Springfield Country Club in connection with additional work needed at the new dam, constructed late last Fall and early in the Winter. The contents of my letter are self-explanatory.

Further inspections will be made of this new structure and when it is found to be satisfactory, a report in connection therewith will be submitted to your Board.

Very truly yours

George H. McDonnell
County Hydraulic Engineer

GHM/emb
enc.

December 21, 1966

Springfield Country Club
1375 Elm Street
West Springfield, Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of dams of Hampden County, you are hereby advised that your dam located on your Country Club property was recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"The embankment forming this dam was noted to be in satisfactory condition. It is well shaped and was covered with a good growth of turf on both side slopes. The upper surface of the embankment was stabilized with a well packed stone dust roadway. An examination of the toe of the dam indicated no seepage of any amount is occurring through the embankment.

The new spillway inlet structure was noted to be in good condition. However, the tube passing through the embankment from the spillway shaft to the downstream toe of the dam is in need of repairs as noted in the report last submitted. The first length of conduit pipe upstream from the discharge end of the tube has moved and settled even more than last reported and the joint between the end pipe and the second pipe has opened up sufficiently where now it is possible to reach through the joint and dig out embankment material. This embankment material is being held in place by arch action over the opening. However, in time, this arch action will fail and with further movement of the last pipe, embankment material will drop into the opening at the conduit joint and a failure will occur in the toe of the dam.

It is recommended that the Owner be directed to remove and reset this last length of conduit pipe during the coming year.

The second joint in the new spillway tube situated downstream from the spillway shaft itself has also opened up as reported previously and the rubber gasket has come out of the joint. An examination of the joint on December 12 showed dirt is still oozing from the joint and that the Owners have not taken any steps to correct this condition as recommended in the letter from your Board sent in January of last year. This second joint should be repaired and it is possible that the repair work can be accomplished without digging out this pipe and breaching the entire embankment.

The old spillway facility will be in need of masonry repairs in the not too distant future. However, for the present, it is satisfactory. The usual flashboards were on the crest and water level was passing over the top of the upper flashboard.

It is recommended that the Owner be sent a copy of this report and be directed to make repairs to the flood flow conduit during the coming year. Since failure to make the repairs could cause loss of the dam, it is further recommended that the Owner be required to complete the repairs by June of 1967 or, at that time, your Board should direct that the pond be drained and kept drained until all repairs have been completed."

This Board concurs in the recommendation of the County Hydraulic Engineer and directs that the necessary steps be taken to repair the joints at the flood flow spillway conduit during or prior to June of 1967. The conditions noted at the recent inspection by the County Hydraulic Engineer were noted previously and were called to your attention. Since failure to take corrective action could eventually cause loss of the dam, it is imperative that the needed maintenance and repair work be planned for the coming year. Inspections will be made by the County Hydraulic Engineer in the Spring and in June of 1967 to be certain that action is being taken. If you wish the advice and assistance of the County Hydraulic Engineer, George H. McDonnell, he may be reached by calling 533-3991.

Any further information you desire in connection with this matter will be made available to you upon request.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS

Springfield Ice Company Dam



1933 West Springfield

Located on Wolf Swamp Brook.

City/Town	West Springfield
Dam	Springfield Ice Company Dam
Name	Springfield Ice Company
Water	Wolf Swamp Brook

May 10, 1933

Springfield Ice Company,
195 Alden Street,
Springfield, Mass.

Gentlemen;

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam, located on Wolf Swamp Brook, so called, in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following conditions noted and recommendation made by him;

"There are some repairs needed on the overflow of the dam, especially on the east wall where the concrete is breaking up. These overflow walls should be repaired and put in proper condition."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____ Chairman.

November 3, 1937

Springfield Ice Company
195 Alden St.
Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby notified that your dam on Wolf Swamp Brook in West Springfield has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

"The concrete overflow channel of this dam is in poor condition, with the walls breaking up and falling into the channel. It is recommended that the owner's attention be called to this condition so that repairs can be made thereon."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman

Strathmore Paper Company Dam aka Russell Pond Dam.



1933 West Springfield

Located on the Westfield River in West Springfield - Also see: Dams in Russell owned by this company. See also: County Highways (West Springfield) - "Strathmore paper Company Dam repair" - ch09043 & ch11021. See also: County Roads Plan #4 (1938) "Dam & Spillway - Strathmore Paper Co - Woronoco Mills (record book 23 page 65)" and Plan #8 (1949) "Dam - Strathmore Paper Co - Woronoco" and Plan #14 (1959) "Dam Repairs Strathmore Paper Co"..

City/Town	West Springfield
Dam	Strathmore Paper Company Dam
Dam	Russell Pond Dam
Name	Strathmore Paper Company
Water	Westfield River

May 17, 1933

Strathmore Paper Company,
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your lower dam, located on the Westfield River in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following condition noted and recommendation made by him;

"While the dam was overhauled and extensively repaired some years ago nevertheless there is some leakage observed at points along the foundations of the structure to which attention should be given."

Any further information concerning this matter which you may desire will be furnished by this office upon request."

Yours very truly,

COUNTY COMMISSIONERS

By _____ Chairman.

June 15, 1933

G.R. Wholean, Chief Engineer,
Strathmore Paper Company,
West Springfield, Mass..

Dear Sir:

In reply to your letter of June 9th
we wish to say that we have asked Mr. Tighe to see
you in regard to the leakage at the base of your lower
dam at West Springfield.

Yours very truly,

COUNTY COMMISSIONERS

By _____ Chairman.

C/N

October 18, 1950

Strathmore Paper Company
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located on the Westfield River in West Springfield has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him:

"There is increased leakage along the base of the dam. There is little or no danger of the dam being suddenly destroyed by an increase in this leakage, however, the condition should be called to the owner's attention."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman

CD Woronoco

April 24, 1958

The Hon. the Board of County Commissioners
Hampden County Court House
Elm Street
Springfield, Mass.

Gentlemen:

The undersigned recently inspected the process water dam of the Strathmore Paper Company, located in Woronoco adjacent to the highway leading from Woronoco to Blandford and situated on Potash Brook. This dam suffered damage in the flood of August 1955 and was later repaired in accordance with plans and specifications filed with your Board. On March 5, 1956 we submitted a report in connection therewith and pointed out the possibility of material downstream from the new masonry wall being washed out, unless it was a very heavy rock fill containing few small rocks and gravel.

When last inspected it was noted that the earth and rock fill downstream of the new masonry wall and adjacent to the old masonry wall, that parallels the direction of Potash Brook, has been washed out to a great extent by overflowing water and the old wall, as well as the left end of the old masonry dam, is in danger of being undermined.

The Owner should be advised of this condition and the need for protective work at this wall foundation should be pointed out. It is recommended that a letter be sent to the Owner advising him of the condition at his dam and the possibility of undermining the masonry wall.

Respectfully submitted

GHM/cmb

George H. McDonnell
County Hydraulic Engineer

April 30, 1958

Strathmore Paper Company
West Springfield, Mass.

Gentlemen:

In accordance with the Provisions of Chapt. 253, Section 45 et seq, of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams in Hampden County, you are hereby advised that your small dam located on Potash Brook and used for process water purposes and fire protection has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him:

"When last inspected it was noted that the earth and rock fill downstream of the new masonry wall and adjacent to the old masonry wall, that parallels the direction of Potash Brook, has been washed out to a great extent by overflowing water and the old wall, as well as the left end of the old masonry dam is in danger of being undermined."

Based upon the above recommendations of the County Hydraulic Engineer, it would seem advisable and necessary that proper protective measures be taken to prevent any further washing out of material adjacent to the masonry structure that forms this dam and thus prevent undermining of the foundation.

Any information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

HAMPDEN COUNTY COMMISSIONERS

Chairman

August 27, 1958

Strathmore Paper Co.
West Springfield
Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that your dam located on Potash Brook upstream of your mill and your dams and dike on the Westfield River as well as the dam at Russell Pond were recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him in regard to the Potash Brook Dam, the dike and Russell Pond Dam.

Potash Brook Dam There is some leakage thru the masonry of the main dam. Heavy rock fill has been placed below the new masonry wall constructed following the flood of August, 1955. This fill should be extended downstream and should be graded on a gentle slope to a point on line with the face of the main dam.

Russell Pond Dam Flashboards were in place on the spillway of this dam. The dam in general seems to be in satisfactory condition. Though the spillway is small in capacity, the dam is so constructed and is so low in height that it can safely pass extreme flood flows over its entire length.

On the dam and immediately downstream of the dam are logs, drums and miscellaneous debris. These materials should be removed and disposed of. Flood flows could wash them against the culverts under General Knox Road and thus might endanger the Road should it act as a dam to form a large pond.

Strathmore Paper Co. Dike This dike is in very good condition. Brush is again growing on the dike. Inspection of the dike will be difficult in 1959 unless all vegetation, including tree growth on the sides of the dike and the toes of the dike, are removed. "

Any information concerning these matters which you may desire will be furnished by this office upon request.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

Thomas F. Sullivan

William F. Stapleton

Acting
Commissioner

Frances M. O'Keefe

October 14, 1959

Strathmore Paper Co.
West Springfield
Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located on Potash Brook upstream of your mill and your dam at Russell Pond have been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"Russell Pond Dam

At the time of the last inspection on Sept. 30, 1959, the flashboards were still in place on the spillway. These flashboards should be removed in advance of the fall rains and remain off of the structure until after the spring rainy season. The spillway was found plugged in part with logs, debris, and the remains of a boat. The spillway channel should be completely cleaned and cleared of these miscellaneous items to prevent them from being washed downstream and possibly plugging the culvert under the highway. The side culverts thru the roadway should not be depended upon to handle major storm flows. All three culverts should be protected and conditions maintained so that normal flow from the spillway can pass thru the culvert under the road directly ahead of the spillway and surplus flow pass thru the two auxiliary culverts.

Strathmore Paper Co. Potash Brook Dam

Some leakage occurs thru the masonry of the main dam. This leakage is not serious from a safety viewpoint. Stone fill placed in front of the wall built following the flood of August, 1955, should be extended down-

stream a sufficient distance to protect the foundation of the side spillway wall at the main dam. This stone fill need not be carried vertically to a very high elevation. It need only be placed high enough to protect the foundation of the side spillway wall."

Any information concerning these matters which you may desire will be furnished by this office upon request.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

Oct. 19, 1960

Strathmore Paper Co.
West Springfield
Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et. seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located on Potash Brook upstream of your mill in Woronoco has been recently inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him.

"The main and original portions of the masonry dam were found to be in satisfactory condition. Heavy runoff from recent storms, particularly the hurricane storm of Sept. 12, caused water to flow over the emergency spillway built following the flood of 1955. Downstream of this spillway section and to the left of the abutment of the main dam, fill has been washed out to a considerable extent. A continuation of this washout by future storms and a repetition of previous washouts, even though the fill be replaced, could endanger the left abutment of the main dam. Fill placed in the washed-out area should be very heavy boulders and the fill should be so placed and graded as to provide for an overflow channel to convey the water beyond the left abutment of the main spillway. Repairs of this nature would undoubtedly be far more permanent than the earth and rock fill previously installed. "

Any information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

Oct. 19, 1960

Strathmore Paper Co.
West Springfield
Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45, et. seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dike located adjacent and to the left of your 1938 Dam at your mill in Woronoco, has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"The dike itself was found to be in good condition and well shaped. Brush has been kept cut down except at the point where the dike joins the dam left abutment. Here at the toe the tree and brush growth is quite thick. It should be cut down so that the area is accessible for inspection and maintenance by personnel of the owner as well as by the engineer. The area referred to is generally at the left abutment of the 1938 dam and in the vicinity of the old and now rotting plank walkway leading from the upper portion of the dike to the toe of that embankment."

Any information concerning this matter which you may desire, will be furnished by this office upon request.

Very truly yours,

HAMPDEN COUNTY COMMISSIONERS

January 11, 1961

Strathmore Paper Co.,
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapt. 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located on Westfield River, in West Springfield, has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"The dam itself and the abutments were found to be in satisfactory condition. It would be advisable to cut and kill or discourage the growth of brush and small trees from the masonry of the abutment areas and at the face of the canal spillway. Such growth can cause damage to the masonry and can result in the opening of masonry joints. Control of such growth now could prevent expensive maintenance at a later date."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours

BOARD OF COUNTY COMMISSIONERS

CD West Springfield
July 29, 1966

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

On Thursday evening, July 21, the undersigned received a telephone call stating that a leak had occurred in the dam of the Strathmore Paper Co. situated on the Westfield River upstream of the location of the Strathmore Paper Co. mill. The call did not come from mill personnel but from a person working in the area and noting the leakage thru the dam.

The undersigned went to the site of the dam on Friday, July 22, and found that a sizeable leak was taking place in the vicinity of the left abutment and that water ponded by the dam was being discharged in large quantities thru the timber crib work and was emerging along the downstream face of the dam at and above the toe and for a distance estimated as about 50 ft. out from the left abutment.

The upstream face of the timber crib dam is covered with heavy planking and, from time to time in the past when leaks have occurred at the dam, it has been found that the planking has failed allowing the ponded water to enter the crib work and discharge thru the dam. The timber planking serves as a roof or water barrier supported by the timber crib work of the structure itself.

From the limited information gained in the field on the inspection, it appeared that planking had failed and that an earth cofferdam would be required to allow for dewatering and examination of the upstream face of the dam at the left abutment.

On Friday, a contractor was working at the site with a single front end loader and was constructing a roadway across the pond to the site of

the failure. This roadway would provide access to the failure location and also serve as a cofferdam to protect the area from inundation during repair work.

By Wednesday night, July 27, the access roadway and temporary cofferdam were in place and steps of a preliminary nature have been taken by mill and contractor personnel to plug the leak in the dam. It became evident that the leak is sizeable and that major repair work will be required at the dam adjacent to the left abutment.

The undersigned met with representatives of the mill and the contractor yesterday afternoon, July 28, and viewed the failure. Two methods for repairing the dam were discussed. One method would require the placing of sheathing back from the dam, excavation of the dam to the left abutment and replanking the dam. The second method would be the excavation of silt from within the dam by opening the top of the dam and filling the timber crib structure from its ledge foundation up to a pre-determined point with mass concrete.

It was felt by all concerned that the first method would not be practical in that steel sheathing would be driven onto ledge and there would be no toe-in to hold the bottom of the sheathing. If a cell type of sheathing construction is to be used, the construction would interfere with the active use of the canal. The canal must remain active to keep the mill in operation. Consequently, we all agreed that the most practical method would be filling the timber structure with mass concrete.

The contractor will open the dam by cutting a section out of the planking near the top sufficiently wide and long to allow access into the timber crib structure. When this is done, the structure will be examined again and the next step for removing any muck within the dam will be reviewed in the field.

This report is to notify your Board of the leak in the dam and to have a record in your files that the owner is proceeding rapidly and continuously with the necessary preliminary investigation work so that permanent repairs can be accomplished in the immediate future.

Since it is impossible to know at this time how the repairs will be accomplished, no drawings of the work to be done will be filed by the owner.

When the work has been done and completed, record plans of changes in the dam itself will be filed.

In the opinion of the undersigned, the work as being carried on is being done in a practical and safe manner. I will keep your Board informed of the progress made on this project.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mbf

CD West Springfield
July 29, 1966

The Honorable the Board of County Commissioners
52 State Street
Springfield, Massachusetts

Gentlemen:

On Thursday evening, July 21, the undersigned received a telephone call stating that a leak had occurred in the dam of the Strathmore Paper Co. situated on the Westfield River upstream of the location of the Strathmore Paper Co. mill. The call did not come from mill personnel but from a person working in the area and noting the leakage thru the dam.

The undersigned went to the site of the dam on Friday, July 22, and found that a sizeable leak was taking place in the vicinity of the left abutment and that water ponded by the dam was being discharged in large quantities thru the timber crib work and was emerging along the downstream face of the dam at and above the toe and for a distance estimated as about 50 ft. out from the left abutment.

The upstream face of the timber crib dam is covered with heavy planking and, from time to time in the past when leaks have occurred at the dam, it has been found that the planking has failed allowing the ponded water to enter the crib work and discharge thru the dam. The timber planking serves as a roof or water barrier supported by the timber crib work of the structure itself.

From the limited information gained in the field on the inspection, it appeared that planking had failed and that an earth cofferdam would be required to allow for dewatering and examination of the upstream face of the dam at the left abutment.

On Friday, a contractor was working at the site with a single front end loader and was constructing a roadway across the pond to the site of

the failure. This roadway would provide access to the failure location and also serve as a cofferdam to protect the area from inundation during repair work.

By Wednesday night, July 27, the access roadway and temporary cofferdam were in place and steps of a preliminary nature have been taken by mill and contractor personnel to plug the leak in the dam. It became evident that the leak is sizeable and that major repair work will be required at the dam adjacent to the left abutment.

The undersigned met with representatives of the mill and the contractor yesterday afternoon, July 28, and viewed the failure. Two methods for repairing the dam were discussed. One method would require the placing of sheathing back from the dam, excavation of the dam to the left abutment and replanking the dam. The second method would be the excavation of silt from within the dam by opening the top of the dam and filling the timber crib structure from its ledge foundation up to a pre-determined point with mass concrete.

It was felt by all concerned that the first method would not be practical in that steel sheathing would be driven onto ledge and there would be no toe-in to hold the bottom of the sheathing. If a cell type of sheathing construction is to be used, the construction would interfere with the active use of the canal. The canal must remain active to keep the mill in operation. Consequently, we all agreed that the most practical method would be filling the timber structure with mass concrete.

The contractor will open the dam by cutting a section out of the planking near the top sufficiently wide and long to allow access into the timber crib structure. When this is done, the structure will be examined again and the next step for removing any muck within the dam will be reviewed in the field.

This report is to notify your Board of the leak in the dam and to have a record in your files that the owner is proceeding rapidly and continuously with the necessary preliminary investigation work so that permanent repairs can be accomplished in the immediate future.

Since it is impossible to know at this time how the repairs will be accomplished, no drawings of the work to be done will be filed by the owner.

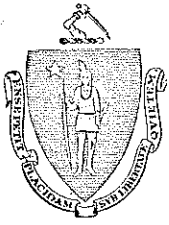
When the work has been done and completed, record plans of changes in the dam itself will be filed.

In the opinion of the undersigned, the work as being carried on is being done in a practical and safe manner. I will keep your Board informed of the progress made on this project.

Very truly yours,

George H. McDonnell
County Hydraulic Engineer

GHM/mbf



Commonwealth of Massachusetts

County of Hampden

Springfield, Mass.

Office of the
County Commissioners
52 State Street

William F. Stapleton
Chairman

Ralph P. Walsh
Floyd W. Fradet

September 24, 1969

Strathmore Paper Company
West Springfield,
Massachusetts

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located at Russell Pond and also the 1938 dike located upstream of your Woronoco mill, have been recently inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him.

"Russell Pond Dam

The spillway at this structure is satisfactory though it is partly blocked by a hugh stump. The stump is at the downstream end of the spillway. During high stream flow it will be washed into the brook and could plug the large culvert passing under the main highway. Should the culvert become blocked, the road would be endangered. Also, should the stump block the culvert, it may become wedged in the tube and be very difficult to remove. It is recommended that this stump be removed from the spillway and either hauled away from the site, or removed to a safe location above maximum high water.

The stoplog is still in the spillway. This should be removed from the spillway crest until after the spring flood flow of 1970.

Water level in storage was nearly up to the top of the stoplog in the spillway crest. Spillway masonry is in fair condition and does not as yet need any repairs.

There is additional debris located between the spillway and the main culvert under the roadway. All of this debris should be cleaned out and disposed of.

Eastern States Exposition Jetty



1940 West Springfield

Jetty built along the easterly bank of Agawam River by Town of West Springfield. See also: County Highways (West Springfield) - "Eastern States Exposition (right of way) along Agawam River" - cho6026.

City/Town West Springfield

Dam	Eastern States Exposition Jetty
-----	---------------------------------

Water Agawam River

RETURN RECEIPT

Received from the Postmaster the Registered or Insured Article, the original number of which appears on the face of this Card.

Board Selection
(Signature or name of addressee)

A. Gallamore
(Signature of addressee's agent)

Date of delivery, *8/8*, 193*4*

Form 3811

SPRINGFIELD
Post Office Department
OFFICIAL BUSINESS

REGISTERED ARTICLE

No. 14238

INSURED PARCEL

No. _____

DESIGN FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE. 1906

POSTMARK OF DELIVERING
OFFICE

AND DATE OF DELIVERY

Return to City Commissioners
(NAME OF SENDER)

Street and Number,
or Post Office Box, }

SPRINGFIELD,

MASSACHUSETTS.

August 7, 1940

Board of Selectmen
Town Hall
West Springfield, Mass.

Gentlemen:

In a recent inspection by our engineer of the dams of Hampden County he has recommended in his report that your attention be drawn to the condition of the jetty built a few years ago along the Easterly bank of the Agawam River.

The engineer's report is as follows:

"The jetty built a few years ago by the town of West Springfield, along the easterly bank of Agawam River, deserves some attention, as the top stones of the extension to the jetty proper, running down stream, have been dislocated and should be set back in place."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman

Board of Selectmen
Town Hall
West Springfield, Mass.

August 27, 1941

Gentlemen:

In a recent inspection by our engineer of the dams of Hampden County he has recommended in his report that your attention be drawn to the condition of the jetty built a few years ago along the Easterly bank of the Agawam River.

The engineer's report is as follows:

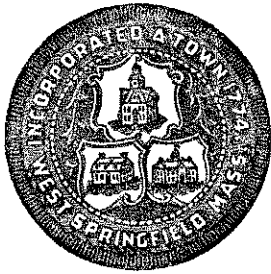
"The top or coping stones of the extension to the easterly end of the jetty have been slid off, apparently by ice thrust, and should be re-set in cement mortar."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman



TOWN OF WEST SPRINGFIELD. MASSACHUSETTS

OFFICE OF

BOARD OF SELECTMEN

JAMES R. DEARDEN, CHAIRMAN
FRANK T. RALEIGH
HOWARD M. TEECE, SECRETARY

OFFICE HOURS

TUESDAY AND THURSDAY 2 TO 4 P. M.

Sept. 5, 1941.

Mr. Thomas J. Costello, Chairman
County Commissioners
Springfield, Massachusetts

Dear Sir:

We thank you for calling to our attention the repairs necessary to the jetty in the Agawam River adjoining the Eastern States Exposition property.

Very truly yours.



Chairman of the Selectmen.

D-L.

Piper Reservoir Dam



1955 West Springfield

Construction of 24" pipeline on Piper Road between Smyrna Street and Amostown Road as part of a project for improving water service throughout Springfield. See also: County Roads Plan #11 (1956) Piper Recreational Dam - Piper Reservoir".

City/Town	West Springfield
City/Town	Springfield
Dam	Piper Reservoir Dam
Name	West Springfield Town Water
Streets	Amostown Road
Streets	Smyrna Street
Streets	Piper Road

April 26, 1933

West Springfield Water Dept.,
Town Hall,
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam located on Darby Brook, and known as the Piper Reservoir Dam, in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following recommendation made by him;

"It is recommended that a surface overflow of ample capacity, in the form of a culvert under the highway carried by the dam, be added to this structure to insure against its being topped by flood flow.

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendation be complied with in a reasonable length of time.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

June 24, 1936

T. M. Beach, Superintendent
West Springfield Water Department
West Springfield, Mass.

Dear Sir:

In answer to your letter of the 13th. inst. relative to the proposed raising of the Piper Reservoir in West Springfield we wish to state that, according to the law, plans and specifications of the proposed alterations must first be filed with and approved by the County Commissioners.

After such plans and specifications are filed, the County Commissioners cause them to be examined by their engineer, who also visits and examines the site of the proposed work, and then recommends to the County Commissioners as to the advisability of approval of the plans and specifications.

You may, therefore, be assured that any application for alterations to the Piper Reservoir Dam, filed in accordance with the above procedure, will receive prompt and careful consideration.

Yours very truly,

COUNTY COMMISSIONERS,

By Thos. J. Costello
Chairman.

Charles W. Bray

Maurice G. Donahue

November 25, 1950

Atty. E. C. Peck, Jr.
Chairman, West Springfield Pool Committee
44 Thomas Drive
West Springfield, Mass.

Dear Sir:

On a recent inspection of the Piper Reservoir Dam it was noted that certain changes have been made at the dam in regard to spillway capacity and that some new piping has been laid through the dam.

Changes to a spillway or additions or alterations to a dam within Hampden County must be approved by the County Hydraulic Engineer. Consequently the plans and specifications for any changes must be filed with the County Commissioners and examined by the undersigned before any construction work is started.

In order that you will not be spending time and money on work that will not meet approval it would be best for you or some one authorized by you to contact the undersigned just as soon as possible. I may be reached at the above address or telephone. Since I am out around the county a great part of the time it would be best to call Holyoke 5525 and make an appointment to meet with me. I will be glad to explain in detail the proper method for processing your plans and specifications and will examine the same for recommendations or approval.

Very truly yours,

By G. H. McDonnell
County Hydraulic Engineer

Piper Reservoir

COPY

December 20, 1950

Mr. Max Von Berlichingen
132 Warren Street
West Springfield, Mass.

Dear Sir:

To date we have not received copies of the plans and specifications for the alterations and additions to Piper Reservoir Dam. It was agreed when we met on December 9, 1950, that you would send these plans to me for the County Commissioners, so that I could review them and make the necessary recommendations. Will you kindly send me these plans and specifications as soon as possible.

I will be unable to approve the work being carried on and allow the pond to be refilled until plans and specifications are properly filed and approved and the work completed strictly in accordance with the approved plans and specifications.

Very truly yours,

By G. H. McDonnell
County Hydraulic Engineer

Piper Reservoir Dam

December 20, 1950

Re: Your letter Dec. 8, 1950
to County Comm'rs., Hampden
County

Board of Selectmen
Town Hall
West Springfield, Mass.

Attention: Raymond H. Bagg, Chairman

Gentlemen:

On November 24, 1950, while making a routine inspection of the Piper Reservoir Dam in West Springfield, the undersigned found that certain additions and alterations were being made to the dam, and that this work was being carried on without proper approval. On November 25, 1950, a letter was sent to the Pool Committee, in care of the Chairman, Attorney E. C. Peck, Jr., in which the Committee was notified that any changes or alterations to the dam must be approved by the undersigned, and that plans and specifications showing the changes should have been filed with the County Commissioners for examination and recommendations.

On December 9, the undersigned met Mr. Max Von Berlichingen, engineer for the Pool Committee, at the site of the work. The engineer was instructed to file plans in the usual manner and to obtain proper approval before continuing with the work. To date these plans have not been filed and a letter is being forwarded to the engineer requesting that he file the plans and specifications.

Approval of the repairs and alterations to the dam will not be given by the undersigned until the work is properly completed and adequate spillway capacity provided.

Very truly yours,

By

G. H. McDonnell
County Hydraulic Engineer

COPY

April 30, 1951

Max. von Berlichingen,
Professional Engineer
132 Warren Street
West Springfield, Mass.

Dear Sir:

I have examined the plans and specifications you have sent me regarding the proposed alterations to the dam at Piper Reservoir in West Springfield.

The plans and specifications seem to be satisfactory, with two exceptions:

1. The construction in the vicinity of the proposed Manhole No. 2 apparently will be at a higher elevation than the invert of the existing 48x18-inch concrete overflow. There should be no obstruction to the flow of water in front of this structure.

2. The discharge end of your 15-inch V.C. drain from Manhole No. 1, will apparently discharge on the side slopes of the dam, and, consequently, certain maintenance may be required to control erosion. Paragraph 4-9, page 4-40 of your specifications describes the installation of rip rap for a short distance below the invert, in order to prevent erosion of the bank soil. This rip rap should be placed along a sufficient length of the area over which the water will discharge, in order to be certain that future maintenance and potential danger to the dam will be held to a very minimum.

You will kindly file a set of the revised plans and specifications as herein recommended together with a petition requesting permission to make the proposed changes to the dam. This petition, together with plans and specifications, should be sent to the Board of County Commissioners, Hampden County Court House, Springfield, Mass. The fee for filing this material is \$5.00. Upon receipt of the officially filed plans and specifications and petition, official action can then be taken on your request.

I am retaining the plans and specifications you sent me as my file copy to be used in inspecting the construction work.

Very truly yours,

By

G. H. McDonnell

County Hydraulic Engineer

TIGHT & BOND

189 High Street
Holyoke, Mass.

May 1, 1951

The Hon Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Attention: William Stapleton, Chairman

Gentlemen:-

Enclosed find copy of a letter forwarded
to Max. von Berlichingen, Professional Engineer,
in regard to Piper Reservoir dam in the Town of
West Springfield. This letter is forwarded for
your information and files and is self-explanatory.

Very truly yours,

G. H. McDonnell

c o p y

TIGHE & BOND
CONSULTING ENGINEERS

189 High Street
Holyoke, Mass.

c o p y

May 23, 1951

The Hon. Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Att. Mr. William Stapleton, Chairman

Gentlemen:-

I have examined the plan and specifications for the additions and alterations to the Piper Reservoir Dam in the Town of West Springfield. The proposed alterations includes the removal of the discharge of storm water sewers into the reservoir, and the laying of new sewer outlets through the dam and under Piper Road. The work also includes the installation of an additional pond overflow pipe, 15 inches in size. The upstream face of the dam embankment is to be covered with a layer of crushed stone. The existing 48" x 18" emergency overflow through the dam is to be maintained, and no obstructions are to be constructed in front of its inlet.

Assuming then, that the work proposed will be faithfully done, and in accordance with the plans and specifications filed, I recommend that the plan and specifications be approved.

Respectfully submitted,

by G. H. McDonnell,
County Hydraulic Engineer

COPY

November 6, 1951

*Piper Reservoir
Dam - W. H. Baggs*

Board of Selectmen
Town of West Springfield
Town Hall
West Springfield, Mass.

Attention: Raymond H. Baggs,
Chairman

Gentlemen:

Upon direction of the County Commissioners of Hampden County, we have investigated Piper Reservoir and Dam as requested in your letter of October 22, 1951 to the County Commissioners of Hampden County, Springfield, Mass.

The Piper Reservoir Dam carrying Piper Road, the overflows and new construction, have been inspected in detail and found to be satisfactory by the undersigned.

The scum drain overflow, as constructed during the past year, indicated a water elevation of 147.00. A metal assembly constructed in the shape of flashboards was found to be lying on the dam adjacent to the scum drain overflow. The undersigned is writing a letter to the Memorial Committee in charge of Piper Reservoir, to determine the purpose and upon what basis, flashboards are apparently to be installed at this overflow.

Upstream from Piper Reservoir, just above Amostown Road, there has been constructed a filtration unit, for the purpose of improving the quality of the water as it enters Piper Reservoir. On the day the undersigned inspected Piper Reservoir Dam, the water level upstream from the filtration unit appeared quite high. The only visible entrance to the conduit under Amostown Road contained a bar rack on the influent end. This bar rack could very easily become plugged with leaves and debris, and thus Amostown Road would become a dam impounding a substantial quantity of water directly upstream from Piper Reservoir. It is possible that if the runoff from the drainage area was high enough, and the debris clogged inlet plugged tight enough, the rising waters could wash out Amostown Road and cause a rapid increase in the height of water in Piper Reservoir.

The construction at the filter location and at Amostown Road apparently does not come directly under the control of the County Commissioners, since the drainage area, height of dam and quantity of water stored are below minimum requirements. For the

Board of Selectmen
West Springfield, Mass.

11/6/51

-2-

protection of the Town highway and downstream structures, it would be advisable that some provision be made for the installation of a proper overflow under Amostown Road, in order that excessive ponding of the water at Amostown Road will not occur. In our letter to the Memorial Committee we plan to point out the undesirable condition at the inlet to the conduit under Amostown Road.

Very truly yours,

G. H. McDonnell
County Hydraulic Engineer

COPY

November 6, 1951

Veterans of World War II
Memorial Committee
Town Hall
West Springfield, Mass.

Attention: Edward C. Peck, Jr.,
Chairman

Gentlemen:

The undersigned recently inspected Piper Reservoir Dam and found that a flashboard structure of a permanent or semi-permanent nature is apparently to be installed on the scum overflow. This flashboard will undoubtedly raise the water of the reservoir to a height greater than that previously contemplated. Before any changes or additions are made to the structure or any portion of the dam or spillway, approval must be obtained by requesting permission for the change from the Commissioners of Hampden County.

While at Piper Reservoir Dam, the undersigned inspected the construction in the vicinity of the filter at Amostown Road. On the day of inspection, the water ponded upstream from Amostown Road was relatively high, and the only apparent outlet was through a bar rack constructed at the headworks of the conduit under Amostown Road. This bar rack presents a dangerous condition, in that should it become plugged with leaves or debris, the water in the brook could become ponded and eventually overflow Amostown Road. The damage that could result might not only be the loss of Amostown Road but damage of a serious nature might occur to structures downstream, particularly Piper Reservoir Dam. Besides the danger to public and private property there would also be the danger of the loss of life of any person in the path of on-rushing water.

This condition at Amostown Road apparently does not come directly under County control, however, the County does have an interest in this condition since it may endanger Piper Reservoir Dam.

Very truly yours,

G. H. McDonnell
County Hydraulic Engineer

November 26, 1952

Park & Playground Commissioners
Town Hall
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located at Piper Road has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"The new overflow was found blocked with boards and debris. This condition should be corrected by the installation of an improved design of flashboards and trash rack. The road drain gutter located just north of the above overflow is causing the face of the dam to be washed. All large debris and logs should be removed from the shore areas and water surface so that in case of storm it will not be washed into the overflow concrete box culvert."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman

Piper Reservoir Dam. W. Spiller

Sept. 23, 1953

Park & Playground Commissioners
Town Hall
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located at Piper Road has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

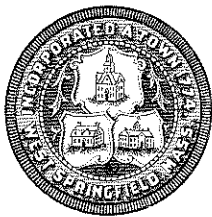
"The overflow pipeline referred to as the scum overflow appears to be blocked. The water level in the Reservoir has raised to above the top of the overflow inlet structure. The examination of the overflow pipeline through the dam showed that this pipeline must be blocked at some point below the downstream edge of the road. The examination of the end of the pipeline showed that stones have been pushed into the pipe and there is a possibility that large stones may have been forced far enough into the pipe to cause a partial block and a reduction of the flow capacity."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman



TOWN OF
WEST SPRINGFIELD MASSACHUSETTS
OFFICE OF

WATER DEPARTMENT

TOWN HALL BUILDING
126 PARK STREET

W-14 Insp.

February 8, 1955

The Hon. the Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Gentlemen:

It is anticipated that the West Springfield Water Department will be constructing a 24" Pipeline on Piper Road between Smyrna Street and Amostown Road, as part of a project for improving the water service throughout West Springfield. This pipeline will be laid within the limits of the public street and will be located under the easterly sidewalk of Piper Road as shown on the enclosed plan and profile.

The section of construction shown on the plan is within the limits of the dam that forms Piper Reservoir. It is our understanding that any construction within a dam must be approved by your Board before this construction can proceed. The proposed pipeline is not a portion of the dam nor does it have anything to do with the impounding of the Reservoir. The pipeline will be constructed of cast iron and will be laid at a shallow depth on the far side of the street from the Reservoir. In this way it is planned to hold the disturbance of the fill to a minimum, to minimize any potential danger to the dam structure itself.

The Board of Water Commissioners does not own the dam and since the planned construction is within the limits of the public road, we are uncertain as to the necessity for submitting the enclosed to your Board. However, to be certain that we do not violate any law of the Commonwealth or any rule or regulation of the County, we submit two copies of the plan and profile of the proposed construction and request the approval of your Board.

Very truly yours,

BOARD OF WATER COMMISSIONERS
TOWN OF WEST SPRINGFIELD, MASS.

Ernest P. Jones
Ernest Jones, Chairman

encs.

Received in the mail on February 9, 1955
from George H. McDonnell, County Hydraulic Engineer.

No. #3-66

d25 097

SPECIFICATIONS
FOR
PIPER RECREATIONAL DAM
PARKS & RECREATION COMMISSION
TOWN OF WEST SPRINGFIELD, MASS.
MARCH - 1956
Tighe & Bond, Inc., Consulting Engrs.
189 High Street...Holyoke, Mass.

Filed - March 8, 1956

See "Special Provisions" Page
for County Commissioners
Approval of Specifications.

PARKS & RECREATION COMMISSION
TOWN OF WEST SPRINGFIELD, MASS.

* * * * *

RE-ADVERTISEMENT FOR BIDDERS

Sealed Proposals for the construction of Piper Recreational Dam will be received by the Parks & Recreation Commission until 7:30 P.M., Eastern Standard Time, on Monday, March 5, 1956, at their office on the second floor of the Town Hall, West Springfield, Mass., and at that time and place publicly opened and read aloud. Proposal Guarantee: \$500.00. Performance and Payment Bond; 100%. Plans and Specifications obtainable at the office of Tighe & Bond, Inc. Consulting Engineers, 189 High Street, Holyoke, Mass., for deposit of \$10.00. Full deposit returnable to bidders; 50% of deposit returnable to non-bidders. Plans to be returned within seven days after bid opening. Minimum wage rates established. Rights reserved to waive informality in or reject any or all proposals or accept proposal deemed most satisfactory to Owner, if it be in the public interest so to do.

TOWN OF WEST SPRINGFIELD

Parks & Recreation Commission.

PROPOSAL FORM



**TIGHE & BOND
CONSULTING ENGINEERS
HOLYOKE, MASS.**

PROPOSAL
TO THE
PARKS & RECREATION COMMISSION
TOWN OF WEST SPRINGFIELD, MASS.
FOR THE INTERSECTION OF
PIPER ROAD AND AMOSTOWN ROAD

* * * * *

The undersigned as bidder declares that the only person or parties as principals interested in this proposal are named below; that this proposal is made without collusion with any other person, firm or corporation; that he has carefully examined the location of the proposed work, has taken into consideration all the difficulties likely to be met with in the doing of the work; that he also has carefully examined the annexed form of Contract and the plans therein referred to and entitled:

"PIPER RECREATIONAL DAM
PARKS & RECREATION COMMISSION
TOWN OF WEST SPRINGFIELD, MASS.

Tighe & Bond, Consulting Engineers
Holyoke, Mass."

and he proposes and agrees that he will contract with the Town of West Springfield, in the form of Contract annexed, to provide all the insurance, labor, machinery, tools, apparatus and other means of construction and to do all the work and furnish all the materials specified in the Contract in the manner and time therein prescribed and in accordance with the requirements of the Engineer, as herein set forth and that he will take in full payment therefor the following sums, to wit:

ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS & FIGURES	AMOUNT OF ITEM	
			DOLLARS	CENTS
1.	400 Cu. Yds.	For each cubic yard of earth excavation made to prepare a foundation for the dam and for the conduit or for any other item on the job, as directed by Engineer, including all labor, equipment, and materials required for or incidental to the work, the sum of:		
			\$ _____	
			(\$ _____) per cu. yd.	

ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS & FIGURES	AMOUNT OF ITEM DOLLARS CENTS
2.	1100 Cu. Yds.	For each cubic yard of impervious fill, furnished, placed and compacted in the central core of the dam in accordance with these specifications and the engineer's instructions, including all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per cu. yard	\$ _____
3.	1100 Cu. Yds.	For each cubic yard of semi-pervious fill, furnished, placed and compacted in the upstream 1/3 of the dam, including all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per cu. yd.	\$ _____
4.	1100 Cu. Yds.	For each cubic yard of pervious fill, furnished, placed and compacted in the downstream 1/3 of the dam, including all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per cu. yd.	\$ _____
5.	300 Cu. Yds.	For each cubic yard of sand fill furnished and placed as hereinafter specified, or as directed by the engineer, including all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per cu. yd.	\$ _____

ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS & FIGURES	AMOUNT OF ITEM DOLLARS CENTS
6.	60 Cu. Yds.	For each cubic yard of concrete furnished in place in the completed work, in accordance with these specifications, including all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per cu. yd.	\$ _____
7.	2,000 Lbs.	For each pound of reinforcing steel furnished in place in the completed work, in accordance with these specifications, including all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per lb.	\$ _____
8.	900 Lbs.	For each pound of structural steel furnished in place in the completed work, in accordance with these specifications, including all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per Lb.	\$ _____
9.	150 Lbs.	For each pound of cast iron furnished in place in the completed work, in accordance with these specifications, including all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per Lb.	\$ _____

ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS & FIGURES	AMOUNT OF ITEM DOLLARS CENTS
10.	60 Lin. Ft.	For each lineal foot of 60" reinforced concrete, standard strength, culvert pipe, furnished and placed by the Contractor as hereinafter specified, including all jointing, labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per Lin. Ft.	\$ _____
11.	18 Lin. Ft.	For each lineal foot of 16", Class 100 or better, cast iron pipe furnished and placed in the completed work, in accordance with these specifications, including specials, jointing, and all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) per Lin. Ft.	\$ _____
12.	Lump Sum	For the furnishing and placing of a 16" low pressure, gate valve, and extension stem as shown on the plans and as hereinafter specified, including all labor, equipment, and materials required for or incidental to the work, the sum of:	
		(\$ _____) Lump Sum	\$ _____
13.	Lump Sum	For the furnishing and installing of a double-leaf, 16-foot wide gate in the existing chain link fence on the Amostown Road end of the dam, including locking device and all labor, equipment and materials required for or incidental to the work, the sum of:	
		(\$ _____) Lump Sum	\$ _____

ITEM NO.	ESTIMATED QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS & FIGURES	AMOUNT OF ITEM DOLLARS CENTS
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14.	700 Sq. Yds.	For each square yard of loaming and fertilizing and seeding, furnished in place in accordance with the specifications, including all labor, equipment and materials required for or incidental to the work, the sum of:	
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(\$ _____) per Sq. Yd.

\$ _____

TOTAL AMOUNT OF BID - Items 1 to 14
inclusive

\$ _____

Alternate to Item 10.	60 Lin.Ft.	For each linear foot of 60" Lock Joint, Reinforced concrete pressure pipe (see Art. 96) furnished and placed by the Contractor, as herein specified, including all jointing, labor, equipment and materials required for or incidental to the work, the sum of:	
-----------------------	---------------	---	--

(\$ _____) per Lin. Ft.

\$ _____

If this Proposal shall be accepted by the Town of West Springfield acting through its Parks & Recreation Commission, the undersigned Bidder agrees to meet the requirements of Article 62 regarding the date of beginning of work and he further agrees to the provisions of Article 67 and specifies that the job shall be substantially complete on Monday, June 4, 1956.

If this Proposal shall be accepted by the Town of West Springfield acting through its Parks & Recreation Commission, and the undersigned shall fail to contract as aforesaid and to give a Performance and Payment Bond in the sum of the full amount of the Contract, with a Surety Company satisfactory to

the Board within ten (10) days of the date of the notice to him from the Owner that the Contract is ready for signature, then he shall be considered to have abandoned the contract and the certified check for Five Hundred Dollars (\$500.) accompanying this proposal shall become the property of the Town of West Springfield.

DATED THIS _____ DAY OF _____ in the Year 1956.

SIGNATURE OF BIDDER: _____

Name of Bidder; _____

Business Address: _____

BY: _____

Residence: _____

In compliance with Article 5, Section B, the Bidder, if this bid is submitted by a firm, partnership or corporation, shall list required information below:

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The proposed surety company on the Bond is to be as follows:

Name: _____

Address of Home Office: _____

Name & Address of Agent:

GENERAL REQUIREMENTS



**TIGHE & BOND
CONSULTING ENGINEERS
HOLYOKE, MASS.**

GENERAL REQUIREMENTS

.....

DEFINITION OF TERMS

Article 1. Definition of Terms.

Wherever in these specifications of other contractual documents the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as follows:

- Addendum An addition to or alteration of the Plans and/or Specifications generally issued for clarification purposes prior to the opening of proposals.
- Advertisement ... The notice published in newspapers and trade bulletins announcing the time and place for the opening of bids for work to be done.
- A.A.S.H.O. The American Association of State Highway Officials.
- Alteration Change in the form or character of any of the work done or to be done.
- A.S.T.M. The American Society for Testing Materials.
- Bidder Any individual, firm or corporation submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.
- Contractor A party to the contract, acting directly or through an authorized lawful agent or employee.
- Engineer The Consulting Engineer acting directly or through an authorized representative, such representative acting within the scope of the particular duties entrusted to him.
- Extra Work Work or materials not called for in the Plans and Specifications and which is deemed necessary for the proper completing of the improvement.
- Layout See Right of Way.
- Location See Right of Way.
- Material Any substance proposed to be used in connection with the construction of the project and its appurtenances.
- Owner The duly authorized official or officials in charge of the project.

Plans The contract drawings, Detail Sheets, or exact reproductions thereof, which show the location, character, dimension and details of the work including any alterations thereof permissible under the contract and authorized by duly approved written orders.

Proposal The written offer of the Bidder submitted in approved form to perform the work contemplated.

Project The purpose for which bids have been called and work contracted for.

Right of Way That area which has been laid out or acquired for the purpose of this project.

Special Provisions .. The special directions, provisions and requirements prepared to cover proposed work not satisfactorily provided for by these General Requirements. These special provisions shall be included within the general term "Specifications" and shall be made a part of the contract with the express purpose that they shall prevail over all other specifications.

Specifications .. The directions, provisions and requirements, designated as Specifications, together with all written agreements made or to be made pertaining to the method and manner of performing the work, or the quantities and qualities of materials to be furnished under the Contract. The Specifications shall include the Advertisement, Proposal Form, General Requirements, Standard Detail Drawings, Special Provisions, Addenda and Contract Form.

Work All performance, including the furnishing of materials, labor, tools, equipment and incidentals, required of the Contractor under the terms of the contract.

The Words "As directed", "as permitted", "as required" or words of like effect shall mean that the direction, permission or requirement of the Engineer is intended, and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean approved by or acceptable or satisfactory to the Engineer, unless otherwise provided herein. The words "necessary", "suitable", "equal" or words of like import shall mean necessary, suitable or equal in the opinion of the Engineer.

The words "approval of the Owner" or "approval by the Owner" shall mean approval either by vote of or in writing by the duly authorized officials.

PROPOSAL REQUIREMENTS AND CONDITIONS

Article 2. Contents of Proposal Forms.

Proposal forms consisting of the documents listed below will be furnished by the Owner to the bidder upon request at the office of the Engineer.

- A. The Specifications; including the Advertisement, General Requirements, Special Provisions, Standard Detail Drawings, Addenda, Proposal Form and Contract Form.
- B. The Plans.

Article 3. Interpretation of Basic Estimate of Quantities.

- A. All bids will be compared on the basis of the Engineer's estimate of quantities of work to be done, as shown in the Proposal.

These quantities are approximate only, being given as a basis for the comparison of bids, and the Owner does not expressly or by implication agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class, item or portion of the work, as may be deemed necessary or expedient by the Owner.

Bidders are required to submit their estimate upon the following express conditions, which shall apply to and become part of every bid received, viz:

An increase or decrease in the quantity for any item or group of items shall not be regarded as cause for an increase or decrease in the prices, nor in the time allowed for the completion of the work, except as provided in the contract. An increase or decrease in the quantity of work to be done shall not warrant any claim for loss, damage or anticipated profit.

B. The work has been divided into classes and items in order to enable the bidder to bid on the different portions of the work in accordance with his estimate of their cost, so that in the event of an increase or decrease in the quantities of any particular class of work the actual quantities executed may be paid for at the price bid for that particular class of work.

Article 4. Examination of Plans and the Location.

Statements as to the condition under which the work is to be performed, including plans, surveys, measurements, dimensions, calculations, estimates, borings, etc., are made solely to furnish a basis for comparison of bids, and the Owner does not guarantee or represent that they are even approximately correct. The Contractor must satisfy himself by his own investigation and research regarding all conditions affecting the work to be done and labor and material needed, and make his bid in sole reliance thereon. The Contractor should carefully examine any materials furnished

by the Owner, the location of the work, the difficulties likely to be met in doing the work and all other factors relating to the Project.

Article 5. Preparation of Proposals

A. Bid Prices.

The Bidder shall submit his proposal upon the blank forms furnished by the Owner. The bidder shall specify a unit price, in both words and figures, for each and every item for which a quantity is given, and shall also show the products of the respective unit prices and quantities, written in figures in the column provided for that purpose, and the total amount of the proposal obtained by adding the amounts of the several items. All words and figures shall be in ink. In case of a discrepancy between the prices written in words and those written in figures, the written words shall govern. In case of a discrepancy between the unit prices and the extended totals, the unit prices shall govern.

No bid will be accepted which does not contain a unit price for every item shown on the Proposal Form. No conditional bids will be accepted.

When an item in the Proposal contains a choice to be made by the bidder, the bidder shall indicate his choice in accordance with the specifications for that particular item, and thereafter no further choice will be permitted without permission from the Owner.

The price for any item, bid and/or contracted for, unless otherwise noted or specified shall include full compensation for all materials, equipment, tools, labor and incidental work, necessary to complete the item to the satisfaction of the Engineer. The prices shall, without exception, include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work.

B. Signatures.

All proposals shall be signed correctly with ink in the proper places provided, as follows:

If the proposal is made by an individual, his name and post office address shall be given.

If the proposal is made by a firm, partnership or corporation it shall be signed by a person having such legal authority from the said firm, partnership or corporation and the person so signing the proposal shall give his own name and title (if any) in addition to the name and address of the firm, partnership or corporation.

If the proposal is made by a firm or partnership the names and addresses of the individual members shall be given.

If the proposal is made by a corporation, the name of the State under the laws of which the corporation was chartered and the names, titles and business addresses of the President, Treasurer and Manager shall be given.

Article 6. Delivery of Proposals.

Each Proposal shall be submitted to the Owner in a sealed envelope. On the outside of the envelope shall be written the bidder's name and address and the name of the project for which the bid is submitted.

If forwarded by mail, the sealed envelope containing the Proposal, and marked as directed above, must be enclosed in another envelope addressed to the Owner. The recommended method of mailing shall be "Registered-Return Receipt Requested."

Proposals received by the Owner at the designated place after the time designated in the Advertisement for Bidders will be returned to the bidder unopened.

It is the bidder's responsibility to see that his Proposal is at the designated place at the designated time. The Owner will not receive any Proposal not delivered to the designated place.

Article 7. Proposal Guaranty Required.

In order to insure the faithful fulfillment of its terms, each Proposal shall be accompanied by a certified check or lawful money as directed in the Special Provisions. Said check will be returned to the bidder unless retained by the Owner under the conditions hereinafter stipulated.

A bid bond will not be accepted as security.

Article 8. Public Opening of Proposals.

Proposals will be publicly opened and read aloud at the time and place indicated in the Advertisement for Bidders. Bidders or their authorized agents are invited to be present.

Article 9. Rejection of Proposals.

Proposals which fail to meet the requirements of Articles 5, 6 and 7, or which are incomplete, conditional or obscure, or which contain additions not called for, erasures, alterations or irregularities of any kind, or in which errors occur, or which contain abnormally high or abnormally low bid prices for any class of item of work, may be rejected as informal. The Owner may waive any informalities in or reject any or all bids and may accept any bid the Owner deems to be in his best interests or in the best interests of the group represented by the Owner.

More than one proposal from the same bidder, whether or not the same or different names appear on the signature page, will not be considered. Reasonable proof for believing that any bidder is so interested in more than one proposal for the work contemplated will cause the rejection of all proposals made by him directly or indirectly. Any or all proposals will be rejected if there is reason for believing that collusion exists among the bidders.

Bidders whose proposals have been rejected because of evidence of collusion as specified in Article 9 will not be considered in future proposals for the same work, and such bidders may be disqualified from bidding on future work.

Article 10. Withdrawal of Proposals.

Any bid may be withdrawn prior to the scheduled time for opening as shown in the Special Provisions or authorized postponement thereof.

No bidder may withdraw a bid within 30 days after the actual date and time of the opening thereof.

Article 11. Competency of Bidders.

No contract will be awarded except to responsible bidders capable of performing the class of work contemplated. Before the award of the contract, any bidder may be required to show that he has the necessary facilities, experience, ability and financial resources to perform the work in a satisfactory manner and within the time stipulated. If the contract contains special work of a complicated nature or if it contains items for materials or work the character of which will depend upon the Contractor's skill or experience, he will be required to show proof that he has a satisfactory record of similar work performed or materials furnished under other contracts. Bidders may be required to furnish the Owner with formal sworn statements as to their experience and their financial status.

Article 12. Material Guaranty.

Before any contract is awarded, the Bidder may be required to furnish without expense to the Owner a complete statement of the origin, composition and manufacture of any or all materials proposed to be used in the construction of the work, together with samples, which samples may be subjected to the tests required by the Owner to determine their quality and fitness for the work.

Article 13. Addenda and Interpretations.

No interpretation of the meaning of the plans, specifications or other contract documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to the office of Tighe & Bond, Consulting Engineers, 189 High Street, Holyoke, Mass., and to be given consideration must be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by registered mail with return receipt requested to all prospective bidders (at the respective addresses furnished for such purposes) not later than three days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve any bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

AWARD AND EXECUTION OF THE CONTRACT

Article 14. Consideration of Bids.

The Owner reserves the right to reject any or all proposals, to waive technicalities, and to advertise for new proposals, or proceed to do the work otherwise, as it may deem best for its own interests.

Article 15. Award of Contract.

The bids will be compared on the basis of the totals of the sums obtained by multiplying the Engineer's estimate of quantities by the unit price stated on the Proposal for each respective item.

The lowest bidders will be determined as described in the above paragraph. The responsible bidders will be determined as described in Articles 9, 11 and 12.

The Contract will be awarded to the lowest, responsible bidder as determined by the Owner.

The Contract will be awarded by the Owner as soon as practicable after the opening of bids. The successful bidder will be notified in writing, by mail, or otherwise, that his bid has been accepted and that he has been awarded the contract.

Article 16. Return of Proposal Guaranty.

The Proposal Guaranty will be returned to all except the three lowest formal bidders within three days after the opening of the bids. The Proposal Guaranty of each of the three lowest formal bidders will not be released by the Owner until after a Contract has been executed. Within three days after the signing of a Contract, the Proposal Guaranty of each of the three low bidders will be returned except as hereinafter provided.

The Proposal Guaranty submitted with any bid rejected as informal will be returned within three days of said rejection.

Article 17. Contract Bond Required.

Prior to the execution of the Contract, the Contractor will be required to furnish a surety bond in the amount specified in the Special Provisions as security for faithful performance of this Contract. The bond shall also guarantee payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract.

The bond must be in the usual and approved form and must also contain the following: "and shall pay for all labor performed or furnished and for all materials used or employed, and shall pay all persons who contract with the principal for labor and materials as provided in the

General Laws of Massachusetts, Chapter 149, then this obligation to be void, otherwise to remain in full force and effect."

Attorneys in fact who sign bid bonds or contract bonds must file with each bond a certified copy of their power of attorney to sign said bonds.

The surety is to be a bonding company or securities satisfactory to the Owner.

Article 18. Execution of Contract.

The Contractor to whom the contract is awarded will be required to appear at the office of the Engineer with the surety offered by him, and execute the contract within 10 calendar days from the date of the notice from the Owner or Engineer to the bidder that the contract is ready for signature. The contract shall be in writing on the forms provided.

Article 19. Failure to Execute Contract.

Should the successful bidder fail to execute the contract and furnish the contract bond insurance, as herein specified, within the time stipulated, the Owner may, at its option, determine that the bidder has refused to execute a Contract with the Owner. The Owner will consider the Proposal Guaranty forfeited by the Bidder. The Owner will then offer the Contract to the second lowest responsible Bidder.

SCOPE OF WORK

Article 20. Intent of Plans and Specifications.

It is the intent that the plans and specifications shall prescribe a complete work or improvement; and when the work is completed, the Contractor shall leave the job site in a neat and finished condition.

The Contractor shall do all the work and furnish all the materials, tools and appliances, except as otherwise specified, necessary or proper for performing and completing the work required by the contract, in the manner and within the time specified. He shall complete the entire work to the satisfaction of the Engineer, and in accordance with the specifications and drawings for the work, at the prices agreed upon.

All the work, labor and materials to be done and furnished under the contract shall be done and furnished strictly pursuant to, and in conformity with the specifications and the plans for the work, which said specifications and drawings shall form part of the contract, and also in accordance with the directions of the Engineer as given from time to time during the progress of the work, under the terms of the contract.

Article 21. Special Conditions.

Construction items or conditions anticipated for any proposed work, and not covered by these "General Requirements", will be described and specified in "Special Provisions". Said Special Provisions shall be

considered a part of the contract. In case of conflict between the said Special Provisions and General Requirements, the Special Provisions shall govern.

Article 22. Alteration of Work.

Should it be found desirable by the Engineer to make alterations in the form or character of any of the work done, or to be done, the Engineer may order such alterations to be made, defining them in writing, supplemented with drawings when in the opinion of the Engineer it is necessary, and the alterations shall be made accordingly; provided that in case such alterations increase the cost of the work the Contractor shall be remunerated at prices based on prices allowed on the same character of work under the specifications, and in case the alterations shall diminish the cost of the work no allowance will be made for anticipated profits.

In case of any alteration, change or addition to the work as originally contemplated, and if said alteration, change or addition justified an increase in the cost of the work, the Owner reserves the right to decide the method that will be used to determine said additional costs. (see Article 73.)

In case of any alterations, so much of the contract as is not necessarily affected by such alterations shall remain in force upon the parties thereto, and such alterations shall be made under the terms of and as a part of the contract, and the security for the performance of the contract shall in nowise be invalidated, but shall be held to secure in like manner the performance of the alterations made under the contract and of any extra work done under the provisions of Article 23.

The Contractor shall perform the work as increased or decreased within the qualifying limits named and subject to the provisions outlined above, but no allowance shall be made for any change in anticipated profits. Adjustments shall be considered waived unless specific complaint is made in writing by the Contractor previous to the construction of such alteration or change and within three calendar days following notice from the Owner of such alteration or change.

Article 23. Extra Work.

The Contractor shall do any work not herein otherwise provided for, when and as ordered in writing by the Engineer, such written order to contain particular reference to this article.

If the Contractor claims that any instructions from the Engineer involve extra cost or an extension of time, he shall so notify the Engineer in writing within three calendar days after the receipt of the Engineer's instructions and in any event before proceeding to execute the extra work. No claim from the Contractor will be considered valid unless made in accordance with the terms of this Article.

Such notice by the Contractor and the keeping of costs by the Engineer shall not in any way be construed as proving the validity of the claim.

Payment for extra work will be made in accordance with the provisions of Article 73.

The Owner may at any time, by a written order, and without notice to the Surety or Sureties, require the performance of such changes in the work as it may find necessary or desirable.

Article 24. Maintenance of Detours.

When required by the Owner, a project shall be closed to travel during construction. Suitable detours shall be provided and maintained as directed or as specified in the "Special Provisions" and in Articles 50 and 51. Payment for this work is to be included by the Contractor in his unit prices for the various items of work. No special payment will be provided unless otherwise stated under "Special Provisions."

Article 25. Removal and Disposal of Structures and Obstructions.

Existing structures such as bridges, culverts, dikes, walls, pipes, guard railing, fences, street railway ties and rails, found within the project limits on right-of-way, which are to be replaced or rendered useless by new construction shall be removed by the Contractor at his own expense unless otherwise provided in the Special Provisions. When their location is such as not to interfere with the work, the removal shall not be done until the new structures replacing them are ready for traffic or until the Engineer shall permit.

All material in existing structures requiring removal shall remain the property of the Owner. The material shall be removed without damage, in sections which will permit easy handling and disposal, to locations within the limits of the project, and convenient for their subsequent removal by the Owner, or as directed by the Engineer. All discarded material, rubbish or debris shall be removed from the work and disposed of as directed. No foreign material or debris shall be permitted to remain or move in a waterway.

Article 26. Rights in the Use of Materials Found on the Work.

The Contractor, with the approval of the Engineer, may take suitable ledge, gravel, sand, loam, clay or other material from within the location lines of the project under construction and use it for other purposes than for forming embankments. If such use necessitates securing additional material for forming embankments, the Contractor shall at his own expense, furnish an amount of borrow of a satisfactory quality, equal to the amount of material taken, as measured in excavation. The Contractor shall not excavate or remove any material which is not within the excavation as indicated by the slope stakes and grade lines, without written approval. No excavated material suitable for use shall be wasted, unless as directed.

Unless otherwise provided the material from any existing structure may be used temporarily by the Contractor during construction. Such material shall not be cut, bent, broken or otherwise damaged.

Nothing in the contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the work or the soil; but all such materials shall, upon being so attached or affixed, become the property of the Owner.

Article 27. Final Cleaning Up.

Upon completion of the work and before acceptance and final payment, the Contractor shall remove, at his own expense, from the project location and from adjoining property, all temporary structures and all surplus material and rubbish which may have accumulated during the prosecution of the work, and shall leave the work broom clean and in a neat and orderly condition. The Contractor shall clean up the job so that the condition of the site will be at least equal to its condition before work began.

No equipment or materials shall be left on the right-of-way or project limits without the written permission of the Engineers.

CONTROL OF WORK

Article 28. Authority of the Engineer.

The Engineer shall decide all questions which may arise as to the quantity, quality, acceptability, fitness and rate of progress of the several kinds of work to be performed and materials to be furnished under the contract, and shall decide all questions which may arise as to the interpretation of any part of the contract, especially the plans and specifications which are a part thereof, as to the fulfillment of this contract on the part of the Contractor, and the determination and decision of the Engineer shall be final and conclusive; and such determination and decision, in case any question shall arise, shall be a condition precedent to the right of the Contractor to receive any money hereunder.

Article 29. Plans and Detail Drawings.

Approved plans, profiles and sections on file in the office of the Engineer will show the location, details and dimensions of the work contemplated, and all work shall be in strict conformity therewith and with the specifications.

Supplemental plans and detail drawings as required in the specifications and furnished by the Contractor shall upon approval become a part of the complete plans. Such approval of supplemental plans or detail drawings, however, shall not be construed as a complete check and shall not operate to relieve the Contractor of any of his responsibility under the contract for the satisfactory completion of the work, nor for the accuracy of the dimensions, details or quantities or for their agreement.

When submitting detail drawings for approval, complete sets of prints as directed shall be furnished the Engineer who will return one set either approved or with corrections marked thereon. Finally, the Contractor shall

furnish the Engineer with complete sets of prints as directed of the corrected and approved detail drawings. No changes shall be made in the approved drawing without the written consent of the Engineer.

The contract price shall include the cost of furnishing all working drawings and the contractor will be allowed no extra compensation therefor. The Engineer will specify the number of sets of approved detail drawings that will be required.

Any work done or materials furnished by the Contractor prior to the approval of the working drawings shall be at his own risk.

Article 30. Conformity with Plans and Allowable Deviations.

The finished work shall conform in all respects to the lines, grades, cross sections and dimensions given on the approved plans. Where conditions make it necessary or desirable for major deviation from the approved plans, such changes shall be made as specified in Article 22 and 23, upon authorization in writing by the Owner.

Article 31. Co-ordination of Specifications and Plans.

The General Requirements, the Addenda, the Proposal Form, the Contract Form, the Plans, the Special Provisions, and all supplementary documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be cooperative; to describe and provide for a complete work. In case of disagreement, the Plans shall have precedence over the General Requirements and the Special Provisions shall govern over both the Plans and the General Requirements; figured dimensions shall govern over scaled dimensions.

Article 32. Co-operation by Contractor.

The Contractor will be given two copies of approved contract drawings, detail sheets, contract and special provisions. He shall have one copy of all such information and a copy of the specifications on the work and available for reference at all times during the prosecution of the work. He shall have at all times a competent and reliable superintendent or foreman on the work, authorized to receive orders and to act for him. Whenever the Contractor is not present on any part of the work when it may be desired to give directions, orders will be given by the Engineer and they shall be received and executed by the foreman or superintendent who is in charge of the particular work in reference to which the orders are given.

The Contractor shall provide all reasonable facilities to enable the Engineer to inspect the workmanship and materials entering into the work. He shall cooperate in the matter of setting and preserving stakes, bench marks, etc., for controlling the work.

The Contractor shall so carry on his work under the direction of the Engineer that public service corporations, or municipal departments may enter on the work to make changes in their structures or to place new structures and connections therewith without interference, and the Contractor shall have no claim for or on account of any delay which may be due to

or result from said work of public service corporations or municipal departments.

Article 33. Adjacent Contracts.

The Contractor shall carry on his work concurrently with that being done on other contracts or work (if any) adjacent to or in conjunction with the project, so as to provide for all possible cooperation towards the satisfactory completion of the work with a minimum of delay and inconvenience. Where necessary and insofar as possible he shall permit other contractors free and unobstructed passage over the work. He shall have no claim for or on account of any damage or delay due to the operations of other contractors or their movements over his section of the work.

Article 34. Construction Stakes.

The Contractor shall furnish, free of charge, all stakes and such temporary structures as may be necessary for marking and maintaining points and lines given by the Engineer for the building of the work, and shall give the said Engineer such facilities and materials for giving said lines and points as he may require; and the Engineer's marks shall be carefully preserved.

Article 35. Authority and Duties of Engineer's Assistants.

The Engineer may appoint such assistants and representatives as he desires and they shall be authorized to inspect work and materials, to give directions pertaining to the work or to the safety and convenience of the public, to approve or reject materials, to make measurements of quantities and to perform such other duties as may be designated by the Engineer.

In case of any dispute arising between the Contractor and the Engineer's assistants, as to materials furnished or the manner of performing the work, the Engineer's assistants shall have the authority to reject the materials or to suspend the work until the question at issue can be referred to and decided by the Engineer.

Engineer's assistants are not authorized to revoke, alter, enlarge, relax or release any requirements of these specifications, nor to issue instructions contrary to the plans and specifications. They shall in no case act as foreman or perform other duties for the Contractor.

Article 36. Inspection of Work and Materials.

The Engineers agents and employees of the Owner may for any purpose enter upon the work and premises used by the Contractor and the Contractor shall provide safe and proper facilities therefor.

The inspection of the work shall not relieve the Contractor of any of his obligations to fulfill the terms of the Contract as herein prescribed by the plans and the specifications.

The Contractor shall furnish the Engineer or his authorized representative with every reasonable facility and assistance for ascertaining whether or not the work as performed is in accordance with the requirements and intent of the plans and specifications. If so directed, the Contractor shall, at any time, before the acceptance of the work, remove or uncover any portions of the finished work necessary for inspection. After the inspection the Contractor shall restore said portions of the work to the condition required by the specifications.

The Contractor shall furnish written information to the Engineer stating the original sources of supply and dates of manufacture of all materials manufactured away from the actual site of the work. In order to insure a proper time sequence for required inspection and approval this information shall be furnished at least two (2) weeks (or otherwise directed by the Engineer) in advance of the incorporation in the work of any such materials.

Failure to reject any defective work or materials shall not in any way prevent later rejection when such defect is discovered, or obligate the owner to make final acceptance.

Article 37. Removal of Defective or Unauthorized Work.

All defective work shall be removed, repaired or made good, notwithstanding that such work has previously been inspected and approved or estimated for payment. If the work or any part thereof shall be found defective at any time before the final acceptance of the whole work, the Contractor shall at his own expense make good such defect in a satisfactory manner.

Any work done beyond the lines and grades shown on the plans or as given, except as herein provided, or any extra work done without authority, shall be considered as unauthorized and at the expense of the Contractor. Such work will not be measured nor compensation allowed therefor. Work so done may be ordered removed at the Contractor's expense.

Upon failure of the Contractor to remove and satisfactorily dispose of any or all defective or unauthorized work, and to remedy the same after being so notified, the Engineer may cause such defective work to be remedied, removed and replaced, and such unauthorized work to be removed; and to deduct the costs therefor, from any moneys due or to become due the Contractor.

Article 38. Final Inspection.

Before any acceptance of the entire project the Engineer will make a complete final inspection of the work done.

If the work or any part thereof is not acceptable to the Engineer at the time of the final inspection, he shall notify the Contractor in writing of the particular defects or parts to be remedied before final acceptance. If the Contractor has not arranged within a period of five (5) days after the date of transmittal of such notice of nonacceptability, to complete the work speedily as described by the Engineer, the Engineer may without further notice and without in any way affecting the contract, make such other arrangements as he may consider necessary to insure the satisfac-

tory completion of the project. The cost of so completing the work shall be deducted from any moneys due or which may become due the Contractor under the contract.

CONTROL OF MATERIALS

Article 39. Source of Supply and Quality.

The source of supply of each material shall be approved by the Engineer before delivery is started.

The Contractor shall furnish all materials required for the work specified in the contract, and said materials shall meet the requirements of the specifications for the kind of work involving their use.

Only new and first quality materials, conforming to the requirements of these specifications and approved by the Engineer shall be used in the work. If, after trial, it is found that sources of supply which have been approved do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved material from other approved sources.

The Contractor may be required to furnish sworn certificates as to quality and quantity of materials before said materials are incorporated in the work.

Article 40. Samples and Tests.

Tests of materials will be made by the Board or under its direction. The Contractor shall furnish such facilities as the Engineer may require for collecting and forwarding samples, and shall not make use of, or incorporate in the work, any material represented by the samples until the required tests have been made and the material accepted. The Contractor in all cases shall furnish the required samples without charge. Where tests are required of materials already incorporated in the work, the Contractor shall furnish samples, cut from the completed work at a time and as directed by the Engineer. The area affected by the removal shall be replaced and refinished, and the Contractor will receive no special compensation for any of the aforesaid work.

Article 41. Delivery and Storage of Materials.

Materials and equipment shall be progressively delivered at the site so that there will be neither delay in the progress of the work nor an accumulation of material that is not to be used within a reasonable time.

Materials shall be stored at the expense of the Contractor so as to insure the preservation of their quality and fitness for the work. When considered necessary by the Engineer, they shall be placed on wooden platforms or other hard clean surfaces, and not on the ground, and shall be placed under cover when directed. Stored materials shall be so located as to facilitate prompt inspection.

Article 42. Defective Materials.

Materials not conforming to these specifications shall be rejected, and removed from the work by the Contractor as directed. No rejected material, the defects of which have been subsequently corrected, shall be used except with the permission of the Engineer. Should the Contractor fail to remove defective material within the time indicated in writing, the Engineer shall have the authority to remove and replace the defective material, and the cost of such removal and replacement will be deducted from any moneys due or to become due the Contractor.

LEGAL RELATIONS AND CONTRACTOR'S RESPONSIBILITY

Article 43. Laws to be Observed.

The Contractor Shall keep himself fully informed of all existing and future state and national laws and municipal ordinances and regulations in any manner affecting those engaged or employed in the work, or the materials used in the work, or in any way affecting the conduct of the work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency is discovered in the contract for this work in relation to any such law, ordinance, regulation, order or decree, he shall forthwith report the same to the Engineer in writing. He shall at all times himself observe and comply with, and shall cause all his agents and employees to observe and comply with, all such existing and future laws, ordinances, regulations, orders and decrees.

The Contractor shall comply with the provisions of Chapter 461 of the Acts of 1935. A table of the minimum wage rates is attached hereto.

The Contractor's attention is directed to the fact that all applicable State and Municipal Laws; and rules and regulations of all authorities having jurisdiction over the construction work in the locality of the project shall apply to the Contract throughout, and they are deemed to be included herein the same as though herein written out in full.

Article 44. Insurance Requirements.

A. Compensation Insurance for Workmen and Traffic Officers:

1. Workmen.

The Contractor shall, before commencing performance of the contract, provide by insurance for the payment of compensation and the furnishing of other benefits under Chapter 149, Section 34A and Chapter 152 of the General Laws, Tercentenary Edition, to all persons to be employed under the contract, and he shall continue such insurance in full force and effect during the term of the contract.

Failure to provide and continue in force such insurance as aforesaid shall be deemed a material breach of the contract and shall operate as an immediate termination thereof.

No cancellation of such insurance, whether by the insurer or by the insured, shall be valid unless written notice thereof is given by the party proposing cancellation to the other party and to the officer or agent who awarded the contract at least fifteen days prior to the intended effective date thereof, which date shall be expressed in said notice. Notice of cancellation sent by the party proposing cancellation, by registered mail, postage prepaid, with a return receipt of the addressee requested, shall be sufficient notice. An affidavit of any officer, agent or employee of the insurer or of the insured, as the case may be, duly authorized for the purpose, that he has so sent such notice addressed as aforesaid shall be prima facie evidence on the sending thereof as aforesaid. This section shall apply to the legal representatives, trustee in bankruptcy, receiver, assignee, trustee and the successor in interest of any such Contractor.

The aforesaid insurance shall be taken out and maintained at the Contractor's own expense.

2. Traffic Officers.

The Contractor shall take out and maintain at his own expense, insurance against damages arising from injury to special uniformed police, referred to in Article 58, while they are engaged in the performance of their duties. The coverage and provisions of such insurance shall be similar to those required to insure employees of the Contractor under the Workmen's Compensation Act, and shall be in addition thereto.

The aforesaid insurance shall be taken out and maintained at the Contractor's own expense.

3. Contractor's Public Liability and Property Damage Liability Insurance.

The Contractor shall furnish evidence to the Board that, with respect to the operations he performs, he carries Contractor's Public Liability Insurance providing for a limit of not less than a monetary value specified in the Special Provisions for all damages arising out of bodily injuries to or death of one person, and, subject to that limit for each person, a total limit of a monetary value specified in the Special Provisions for all damages arising out of bodily injuries to or death of two or more persons in any one accident, and Contractor's Property Damage Liability Insurance providing for a limit of not less than a monetary value specified in the Special Provisions for all damages arising out of injury to or destruction of property in any one accident and, subject to that limit per accident, a total (or aggregate) limit of a monetary value specified in the Special Provisions for all damages arising out of injury to or destruction of property during the policy period.

If any part of the work is sublet similar insurance shall be provided by or in behalf of the subcontractors to cover their operations.

Such property damage and public liability insurance as are provided under this Contract must cover all the various types and items of work that are to be undertaken. For the purposes of this Contract the insurance shall be considered to be in full effect from the date of signing of the Contract to the date of the final acceptance of the work.

Such public liability and property damage insurance as are provided under this contract must carry a clause or rider agreeing to "assume the defense of and indemnify and save harmless the Owner, together with his officers, employees and agents, from all suits, loss, cost or damage arising out of or attributable to claims related to the project."

Satisfactory proof of insurance coverage shall be given to the Owner. Three copies of the insurance certificate shall be furnished prior to the signing of the Contract. A complete policy will be furnished to the Engineer before the beginning of construction operations.

Failure to provide and continue in force, the property damage and public liability insurance during the life of this Contract shall be deemed a breach of the Contract and shall operate as an immediate termination thereof.

The aforesaid insurance shall be taken out and maintained at the Contractor's expense.

Article 45. Working Hours.

No laborer, workman, mechanic, foreman or inspector working within the Commonwealth, in the employ of the Contractor, sub-contractor, or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be required or permitted to work more than eight hours in any one day or more than forty-eight hours in any one week, or more than six days in any one week, except in cases of emergency. Any contractor or sub-contractor for said department, may employ laborers, workmen, mechanics, foremen and inspectors for more than eight hours in any one day in such construction or reconstruction when, in the opinion of the commissioner of labor and industries, public necessity so requires.

Article 46. Rules for Employment of Labor.

The Contractor and all sub-contractors shall keep a true and accurate register of all mechanics, teamsters, chauffeurs and laborers employed thereon, showing the name, address, and occupational classification of each employee on said works, and the hours worked by, and the wages paid to each such employee, and shall furnish to the Massachusetts Department of Labor and Industries upon its request a true statement of the same. Such records shall be kept in such manner as the Commissioner of Labor and Industries shall prescribe, and shall be open to inspection by any authorized representative of the Department of Labor and Industries at any reasonable time and as often as may be necessary.

In the employment of mechanics, teamsters, chauffeurs, and laborers in the construction of public works by persons contracting or subcontracting for such works, preference shall first be given to citizens of the Commonwealth who have served in the army or navy of the United States in time of war and have been honorably discharged therefrom or released from active duty therein, and who are qualified to perform the work to which the employment relates; and secondly, to citizens of the Commonwealth generally, and, if they cannot be obtained in sufficient numbers, then to citizens of the United States. Every employee in the work covered by the contract shall

lodge, board and trade where and with whom he elects, and neither the Contractor nor his agents or employees shall directly or indirectly require as a condition of employment therein that an employee shall lodge, board or trade at a particular place or with a particular person. Attention of bidders is called to Section 148 of Chapter 149 of the General Laws, and acts in amendment thereof which require the weekly payment of employees.

Article 47. Permits and Licenses.

The Contractor shall procure at his own expense all permits and licenses, pay all charges and fees and give all notices necessary and due in connection with the lawful prosecution of the work.

Article 48. Patented Devices, Materials and Processes.

Whenever the Contractor desires to use any design, device, material, or process covered by letters patent or copyright, the right for such use shall be secured by suitable legal agreement with the patentee or owner, and a copy of this agreement shall be filed with the Owner.

Article 49. Sanitary Provisions.

The Contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of his employees as may be necessary to comply with the requirements of the Department of Public Health, local health officials or of other authorities having jurisdiction.

Article 50. Public Safety and Convenience.

The Contractor shall be responsible for the maintenance of traffic over, through or around the work included in his contract with the maximum of safety and practicable convenience to such traffic during the life of the contract, and whether or not work thereon has been suspended temporarily. He shall take all precautions for preventing injuries to persons or damage to property in or about the work. If the Contractor constructs temporary bridges or provides temporary crossings of streams, his responsibility for accidents shall include the roadway approaches as well as the structures of such crossings.

The work shall be carried on in such a manner as to provide safe passage at all times for public travel and with least obstruction to traffic. The convenience of the general public and of residents along and adjacent to the project shall be provided for in an adequate and satisfactory manner. The Contractor shall provide and maintain at his own expense (except as otherwise provided herein) in a safe and passable condition, such temporary by-passes and temporary bridges as may be necessary to accommodate traffic on and around the construction; and he shall provide and maintain, in a safe condition, temporary approaches to and crossings of intersecting highways.

Roads shall be closed to travel only as directed by the Engineer. Where the new construction coincides with the present traveled way, the Contractor shall so carry on his work that travel will not be obstructed.

The Contractor shall at all times so conduct the work that the abutters shall have reasonable access to their property as directed by the Engineer. When it is necessary to leave materials and equipment upon the highway they shall be placed so as to cause the least possible obstruction to pedestrians and other travel.

Work shall be carried on in such a manner as to provide for reasonable fire protection at all times.

When the work in any way affects the operation, management, maintenance, business or traffic on any railroad, such work shall be carried on in a manner satisfactory to the said railroad. The Contractor shall use all possible vigilance in order effectually to guard against all accidents or damages on the railroad due to his work, and the Contractor shall at all times during the progress of the work so manage and execute the same as to cause the least possible interference with the operation, management, business or traffic of the railroad.

In the event that the Contractor fails to comply with the provisions of this Article, then the Owner shall proceed to make such required improvements, detours, by-passes, etc., as he believes necessary. The Owner shall, at his own discretion, either proceed with said work immediately or after a suitable time limit specified in a notice to the Contractor. The cost of said work will be borne by the Contractor.

Article 51. Barricades, Warning Signs and Lights.

The Contractor shall at his own expense provide, place and erect all necessary barricades and warning signs and furnish and keep lighted all lights necessary to protect the work from traffic, pedestrians and animals. He shall also furnish at his own expense a sufficient number of watchmen at all times to protect the work.

Highways closed to traffic shall be protected by suitable barricades and warning signs, and the Contractor shall provide and maintain adequate lights and illumination therefor. He shall be held responsible for all damage to the work due to any failure of signs and barricades to protect the work properly from traffic, pedestrians, animals or other causes.

In the event that the Contractor fails to comply with the provisions of the Article, then the Owner shall proceed to make such required improvements, detours, by-passes, etc., as he believes necessary. The Owner shall, at his own discretion, either proceed with said work immediately or after a suitable time limit specified in a notice to the Contractor. The cost of said work will be borne by the Contractor.

Article 52. Protection and Restoration of Property.

The Contractor shall, at his own expense, preserve and protect from injury all property either public or private along and adjacent to the project, and he shall be responsible for and repair at his own expense any and all damage and injury thereto. He shall exercise special care during

his operations to avoid injury to underground structures such as water or gas mains, pipes, conduits, manholes, catch basins, etc. When necessary, the Contractor shall cooperate with representatives of public service companies in order to avoid damage to their structures by furnishing and/or erecting suitable supports, props, shoring or other means of protection.

Fire hydrants adjacent to the work at all times shall be readily accessible to fire apparatus and no material or other obstructions shall be placed within a radius of ten (10) feet of a fire hydrant.

Land monuments and property marks shall be carefully protected and if necessary to remove the same, he shall do so only at the Engineer's direction and after an authorized agent has witnessed or otherwise referenced their location. The Contractor shall not injure or remove trees or shrubs without proper authority. Insofar as possible the Contractor shall confine his movements and operations to the area within the limits of the location and the area outside the scope of the work shall not be disturbed except as directed.

Article 53. Responsibility for Damage Claims.

The Contractor shall take all responsibility for the work and take all precautions for preventing injuries to persons and property in or about the work; shall bear all losses resulting to him on account of the amount or character of the work, or on account of the weather elements or other causes, and the Contractor shall indemnify and save harmless the Owner and all of its officers, agents and employees against all suits, claims or liability of every name and nature, arising out of or in consequence of any acts of omission or neglect of the Contractor in the performance of the work covered by the contract and/or failure to comply with the terms and conditions of said contract, whether by himself or his employees or subcontractors.

Damage to materials furnished by the Owner or damage to the Owner's property, either now existing or constructed under this Contract, and all loss or deterioration occurring prior to the final acceptance of the work, and resulting from the Contractor's operations, shall be made good by the Contractor at no expense to the Owner.

Article 54. Contractor's Responsibility for the Work.

Until its final approval by the Owner, the Contractor shall assume full charge and care of the work and he shall take every necessary precaution against injury or damage to the work by action of the elements, or from any cause whatsoever, whether arising from the execution or the non-execution of the contract. The Contractor shall bear all losses resulting to him on account of the amount or the character of the work, or because the nature of the land in or on which the work is done is different from what was estimated or expected, or on account of the weather elements, or other causes.

The Contractor shall rebuild, repair, restore and make good at his own expense, all injuries or damages to any portion of the work occasioned by any of the above causes before the completion of the work and the accep-

tance of the contract. Issuance of an estimate on any part of the work done shall not be construed as final acceptance of any work completed up to that time.

The Contractor shall reimburse the Owner for all expenses, losses or damages, as determined by the Engineer, incurred by or in consequence of any defect, act, omission, or mistake of the Contractor or his employees.

The Contractor will be held responsible for any and all claims for damage to underground structures such as water or gas mains, pipes, conduits, manholes or catch basins, due to his operations or to the operations of any of his sub-Contractors.

Locations shown for existing underground pipes and utilities are approximate only, as determined from records, M-Scope surveys and field observations. The Contractor shall have no claim if any utility or pipeline is not shown in correct location or is present but not shown on the plans. The Contractor shall be responsible for notifying utility owners in reasonable advance of his work and he shall request of the utility owner, the staking out on the ground surface, of underground utilities and structure. The Contractor shall notify the Engineer, of any refusal or failure to stake out utilities after reasonable notice, and the Engineer and the Contractor will jointly take reasonable action to determine the location of the utilities before the beginning of excavation.

The Contractor shall contact all utility owners to determine if they have any buried pipes, cables, objects, etc. in the area of his work. Gas, Electric, gasoline, Telephone, Radio, water, Telegraph, oil, natural gas, Sewers, drains, fire alarm, ADT, etc. shall all be considered utilities herein.

Article 55. Claims Against Contractors.

The Contractor shall pay all bills for labor and materials contracted by him and for the rental of appliances and equipment hired by him for or on account of the work herein contemplated. The Owner may keep any moneys which would otherwise be payable at any time hereunder, and apply the same, or so much as may be necessary therefore, to the payment of any expenses, losses or damages incurred by the Owner and determined as herein provided, and may retain, until all claims are settled, so much of the moneys as the Owner shall be of opinion will be required to settle (1) all claims against the Owner and its officers and agents as specified in Article 53 and 54, and (2) all claims for labor performed or furnished, for materials used or employed in such construction or repair, including lumber so employed which is not incorporated in the construction or repair work and is not wholly or necessarily consumed or made so worthless as to lose its identity but only to the extent of its purchase price less its fair salvage value, and for the rental or hire of vehicles, shovels, Excavating and Backfilling equipment rollers propelled by steam or other power, concrete mixers, tools and other appliances and equipment employed, said claims having been filed with the County Treasurer or City or Town Clerk, in accordance with Section 29, Chapter 149 of the General Laws, as appearing in the Tercentenary Edition, as amended by Chapter 361 of the Acts of the year 1938, and all subsequent amendments thereto, or the Owner may make such settlements and apply thereto any moneys retained under the contract. If the moneys retained under the contract are insufficient to pay the sum due under the claims for labor and materials and for the rental of appliances and equipment filed as aforesaid,

the Owner may, at its discretion, pay the same, and the Contractor shall repay to the Owner all sums so paid. The Owner may also, with the written consent of the Contractor, use any moneys retained, due or to become due under the contract, for the purpose of paying for labor and materials and for the rental of appliances and equipment for the work for which claims have not been filed as specified above. It is understood that the security required by Section 29 of Chapter 149 of the General Laws, Tercentenary Edition, is obtained both by the bond accompanying the contract and by the power of the Owner to retain and pay money under the provisions of this article, but the release of one shall in no way impair or discharge the other.

Article 56. No Waiver of Legal Rights.

Neither the inspection by the Owner nor any of its employees or agents, nor any order, measurement or certificate by the Engineer, nor any order by the Owner for the payment of money, nor any payment for, or acceptance of, the whole or any part of the work by the Engineer or Owner, nor any extension of time, nor any possession taken by the Owner or its employees, shall operate as a waiver of any provision of the contract, or of any power herein reserved to the Owner or any right to damages herein provided; nor shall any waiver or any breach of the contract be held to be a waiver of any other or subsequent breach. Any remedy provided in the contract shall be taken and construed as cumulative, that is, in addition to each and every other remedy, herein provided; and the Owner shall also be entitled as of right to a writ of injunction against any breach of any of the provisions of the contract.

Article 57. Use of Explosives.

When the use of explosives is necessary for the prosecution of the work, the Contractor shall observe the utmost care not to endanger life and property, and whenever directed, the number and size of the charges shall be reduced. All explosives shall be stored in a secure manner and all such storage places shall be marked clearly "DANGEROUS - EXPLOSIVES," and shall be in the care of competent watchmen at all times. The method of storage and handling explosives and highly inflammable materials shall conform with all the State laws and regulations, as well as any local requirements.

Prior to blasting, the Contractor shall serve reasonable notice thereof to the operating official or company, or companies, leasing or owning pipes, conduits, poles, wires, etc., in danger of being injured by the blasting in order that a representative of said owner or lessees may be present at the site, and he shall take proper precaution to prevent such injury by the use of sufficient dunnage.

No blasting shall be attempted until sufficient warning has been given to all persons in the vicinity of the work.

The cost of additional bond or insurance, if any, required by the Owner and/or his agents, or by other duly authorized officials, shall be borne by the Contractor. No extra compensation will be paid the Contractor for the additional risk involved in blasting, for the additional cost of the extreme precautions required for safe blasting or for the additional cost of bonds or insurance required.

Article 58. Traffic Officers and Flagmen.

When in the opinion of the Owner it is necessary that special uni-

formed police be used to direct traffic, he may request the Contractor to obtain, in addition to the usual employees of the Contractor, a reasonable number of special uniformed police, and the Contractor shall obtain and furnish such men. These special uniformed police shall at all times be subject to the direction and control of the Contractor.

To reimburse the Contractor for this additional expense, the Owner will pay to the Contractor, in addition to the contract prices, the cost of such special uniformed police, such cost to include the actual wages paid by the Contractor to such police plus his expenses due to the requirements of the Federal Social Security Act, and the Massachusetts Unemployment Compensation Act and the cost of insurance required under Article 44 to insure said police as herein required.

The Contractor shall pay to any reserve police officer employed by him the prevailing rate of wages paid to regular police officers in such city or town. (C. 149 General Laws, Ter. Ed. as amended by C. 252 of the Acts. of 1939.)

When any work is being done by the Contractor which may obstruct the tracks of a railroad or in any way endanger the running of trains, a flagman or flagmen, designated by the Chief Engineer of the railroad shall be on duty for the protection of the property and traffic of the railroad.

The expense for all flagging service which is required shall be assumed by the Contractor and included in the prices bid for the various items for work to be performed under this contract.

Article 59. Temporary Use of Work.

Any portion of the work which is in an acceptable condition for use may be opened for use as directed and such opening for use shall not be construed as an acceptance of the work, or part thereof, nor shall it act as a waiver of any of the provisions of these specifications and the contract. The Contractor shall make at his own expense any and all necessary repairs or renewals to the work due to said opening for use under instructions from the Engineer, as well as to defective materials and work, natural causes, to ordinary wear and tear or otherwise, preceding completion and acceptance of the work. Completed sections of the work shall be maintained by the Contractor in an acceptable manner, until the final acceptance of the contract. He shall not permit use of any portion of the work unless so authorized by the Engineer.

PROSECUTION AND PROGRESS

Article 60. Subletting or Assignment of Contract.

The Contractor shall give his personal attention constantly to the faithful prosecution of the work, shall keep the same under his personal control, and shall not assign by power of attorney or otherwise, or sublet the work or any part thereof without the previous written consent of the Owner and shall not, either legally or equitably, assign any of the moneys payable under this agreement, or his claim thereto, unless by and with the like consent of the Owner. He shall be responsible for the acts and omissions of his sub-Contractors, if any, and of all persons directly or indirectly employed by him or them in connection with the work.

The Contractor shall comply with the provisions of Section 179A of Chapter 149 of the General Laws, relative to giving such preference to citizens in awarding contracts for public work as is therein provided.

Article 61. Schedule of Operations.

Before commencing work, the Contractor shall, if required, submit a schedule of operations for approval by the Engineer. The schedule shall show the methods and order of operations that the Contractor proposes to use. The approval of the schedule by the Engineer shall not be construed as relieving the Contractor from any responsibility.

Article 62. Prosecution of Work.

The Contractor shall commence work within seven (7) calendar days after the execution of the contract, or within such other period as the Engineer shall authorize in writing, (approved by the Owner) at such points as the Engineer may direct, and he shall thereafter prosecute the work at such points and in such order as the Engineer may from time to time prescribe.

Should the prosecution of the work for any reason be discontinued, the Contractor shall notify the Engineer at least twenty-four (24) hours in advance of resuming operations.

It is the purpose of the Owner to complete the work in the shortest time possible and consistent with approved construction. To this end, Contractors will be required to use improved methods and equipment for doing the work and various parts thereof. All equipment shall be complete and well designed, and the organization shall be efficient and effective.

If, in the opinion of the Engineer, it is necessary at any time, the Contractor shall, when directed, employ such forces and equipment for one or more additional shifts as will be required to insure the proper completion of the work. The Contractor shall provide and maintain, including power or fuel, sufficient lights for the safety of his construction forces and to ensure the proper construction, inspection and prosecution of the work; in addition to any lights necessary to protect the work or the public. The Contractor shall not receive any compensation therefor in addition to the contract unit prices.

The Contractor shall work diligently and steadily on the work, and when ordered in writing by the Engineer to either begin work again or to increase personnel and equipment on the work to speed up progress, the Contractor fails so to do within 5 calendar days, the Contractor shall be considered to have abandoned the job and the Bonding Company shall be notified to complete the work or forces and equipment shall be engaged by the owner to complete the work as per conditions herein.

Article 63. Delay in Commencing Work.

The Owner may delay the commencing of the work, or any part thereof, if the Owner shall deem it best for its interests to do so. The Contractor shall have no claim for damages on account of such delay, but shall be entitled to an equivalent extension of time in which to complete the whole

or any portion of the work required under the Contract. The Contractor shall have no claim for damages on account of any delay on the part of the Owner in performing or furnishing any work or materials to be performed or furnished by the said Owner in connection with the execution of the work covered by the contract.

Article 64. Limitations of Operations.

The Contractor shall so limit his operations and carry on his work in such manner and sequence as to insure the least possible interference with traffic and abutters.

The Owner reserves the right to limit the prosecution of the work to such points and in such order as the Engineer may direct.

Article 65. Character of Workmen.

The Contractor shall employ only competent men to do the work, and whenever the Engineer shall notify the Contractor in writing that any man on the work is, in his opinion, incompetent, unfaithful, disorderly or otherwise unsatisfactory, such man shall be discharged from the work, and shall not again be employed on it except with the consent of the Engineer.

Article 66. Temporary Suspension of Work.

The Engineer shall have the authority to suspend the work wholly or any part thereof, for such periods as he shall deem necessary, because of unsuitable weather conditions, or failure to complete adjacent contracts, or to provide time for moving of utilities, or for such other causes as are considered unfavorable for the satisfactory prosecution of the work, or for such time as he may deem necessary due to the failure of the Contractor to carry out orders given or to perform any provision of the contract. Upon receipt of written order from the Engineer, the Contractor shall immediately suspend work or such part thereof in accordance with the order. No work shall be suspended without the written permission of the Engineer. The work shall be resumed when conditions so warrant or deficiencies have been corrected and the conditions of the contract satisfied as ordered or approved in writing by the Engineer. No allowance of any kind will be made for suspension of work by order of the Engineer, except for an extension of time equal to the period of suspension.

Article 67. Failure to Complete Work on Time.

On or before the date stated in the proposal for completion, the whole work shall have been performed in accordance with the terms of the contract. The time in which the various portions and the whole of the contract are to be performed and the work is to be completed is an essential part of the contract.

In case the work embraced in the contract shall not have been completed by the time stipulated therein (according to the foregoing requirements) the Contractor shall reimburse to the Owner a sum of money equal to the amount that the Owner is required to spend as a result of the delay in completion of the work. This amount shall include the cost of engineering and inspection on the work for the period of time overrun.

The Engineer is to constitute an adjudicator in regard to this Article of the Contract. He is to determine the cost or loss suffered by the Owner as a result of the delay in completion of the work.

Whatever the sum of money may become due and payable to the Owner by the Contractor under this article may be retained out of money belonging to the Contractor in the hands and possession of the Owner; and it is agreed that this article is to be construed and treated both by the parties to the contract and by all courts of law or equity, not as imposing a penalty upon said Contractor for failing fully to complete said work as agreed on or before the time specified in the Proposal, but as liquidated damages to compensate said Owner for all damages actually suffered because of the failure of the Contractor fully to complete said work on or before the date of completion specified in the Proposal.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in nowise operate as a waiver on the part of the Owner of any of its rights under the contract.

Article 68. Annulment of Contract.

If the Contractor shall be adjudged a bankrupt, or if he shall make a general assignment for the benefit of his creditors, or if a receiver of his property shall be appointed, or if the work to be done under the contract shall be abandoned, or if the contract or any part thereof shall be sublet without the previous written consent of the Owner, or if the contract or any claim thereunder shall be assigned by the Contractor otherwise than as herein specified, or if at any time the Engineer shall be of the opinion, and shall so certify in writing to the Owner that the work, or any part thereof, is unnecessarily or unreasonably delayed, or that the Contractor has violated any of the provisions of the contract, the Owner may notify the Contractor to discontinue all work, or any part thereof; and thereupon the Contractor shall discontinue such work, or such part thereof as the Owner may designate, and the Owner may thereupon, by contract or otherwise, as it may determine, complete the work, or such part thereof, and charge the entire expense of so completing the work or part thereof to the Contractor; and for such completion the Owner for itself or its agents may take possession of and use or cause to be used in the completion of the work or part thereof of any such materials, animals, machinery, implements and tools of every description as may be found upon the line of said work. The Owner shall not be liable for any depreciation, loss or damage to said materials, animals, machinery, implements or tools during said use, nor until removed by the Contractor after completion of the work. Unless so removed within fifteen (15) days after mailing of notice so to do, they may be sold at public auction, after publication of notice thereof at least twice in any newspaper published in the City or Town, and the proceeds credited to the Contractor's expense subject to a lien for the storage charges.

If the engineer shall certify that the rate of progress is not satisfactory the Owner may, instead of notifying the Contractor to discontinue all work or any part thereof, notify him from time to time to increase the force, equipment and plant, or any of them, employed on the whole or any part of the work, stating the amount of increase required; and unless he shall within five (5) calendar days after any such notice, increase his force, equipment and plant to the extent required therein, and maintain and

employ the same from day to day until completion of the work or such part thereof or until the conditions as to the rate of progress shall, in the opinion of the Engineer, be fulfilled, the Owner may employ and direct the labors of such additional force, equipment and plant as may, in the opinion of the Engineer, be necessary to insure the completion of the work or such part thereof within the time specified, or at the earliest possible date thereafter, and charge the expense thereof to the Contractor. Neither the notice from the Owner to the Contractor to increase his force, equipment or plant; nor the employment of additional force, equipment or plant by the Owner shall be held to prevent a subsequent notice from the Owner to him to discontinue work under the provisions of the preceding portion of this article.

All expenses charged under this article shall be deducted and paid by the Owner out of any moneys then due or to become due the Contractor under the Contract, or any part thereof; and in such accounting the Owner shall not be held to obtain the lowest figures for the work of completing the contract or any part thereof, or for insuring its proper completion, but all sums actually paid therefor shall be charged to the Contractor. In case the expenses so charged are less than the sum which would have been payable under the contract if the same had been completed by the Contractor, the Contractor shall be entitled to receive the difference; and in case such expenses shall exceed the said sum, the Contractor shall pay the amount of the excess to the Owner upon completion of the work, without further demand being made therefor.

MEASUREMENT AND PAYMENT

Article 69. Measurement of Quantities.

The quantities of the various items of work performed shall be determined by the Engineer.

Upon the completion of the work and before final payment is made, the Engineer will make final measurement to determine the quantities of the various items of work performed, as the basis for final settlement. All measurements shall be made according to the United States standard units of measurements.

All materials which are specified for measurement by weight shall be weighed on standard scales furnished by and at the expense of the Contractor. Such scales shall be sealed at the expense of the Contractor as often as is necessary to insure their accuracy. A sworn weigher to be appointed and compensated by the Owner shall weigh all materials required to be weighed as above provided. If materials are shipped by rail or trucks, the car weights or quarry weights may be accepted, but scales shall be used as above, if so directed.

Article 70. Scope of Payments.

The Owner will pay and the Contractor shall receive and accept the compensation as herein provided, in full payment for the furnishing of all materials, labor, tools and equipment and for performing all work contemplated and embraced under the contract, also for all loss or damage arising out of the nature of the work, or from the action of the elements, or from any unforeseen difficulties or obstructions which may arise or be encoun-

tered during the prosecution of the work and until its final acceptance by the Owner, and for all risks of every description connected with the prosecution of the work, also for all expenses incurred by, or in consequence of the suspension or discontinuance or the said prosecution of the work as herein specified, and for any infringement of patent, trade-mark or copyright, and for completing the work in an acceptable manner according to the plans and specifications.

The payment of any current estimate, or of any retained percentage shall in no way constitute an acknowledgement of the acceptance of the work or in no way or degree prejudice or affect the obligation of the Contractor, at his own cost and expense, to repair, correct, renew or replace any defects and imperfections in the construction of, or in the strength of, or quality of materials used in or about the construction of the work under contract and its appurtenances, as well as all damages due or attributable to such defects; which defects, imperfections or damages shall have been discovered on or before the final inspection and acceptance of the work. The Engineer shall be the sole judge of such defects, imperfections, or damages and the Contractor shall be liable to the Owner for failure to correct the same as provided herein.

Article 71. Payment for Increased or Decreased Quantities.

An increase in quantities of work to be performed (as set forth in Articles 3, 22 and 23) will be paid for at the contract unit price for the actual work done, in the same manner as if such work had been included in the original estimated quantities. No allowance will be made for anticipated profits or underruns in quantities.

Changes involving extra work will be paid for according to the method stipulated in the extra work orders.

Article 72. Omitted Items.

The Engineer may order omitted from the work any items or portions of the work found unnecessary to the improvement and such omission shall not operate as a waiver of any condition of the contract nor invalidate any of the provisions thereof, nor shall the Contractor have any claim for anticipated profit.

Article 73. Payment for Extra Work.

Extra work will be paid for in accordance with the accepted and approved extra work orders according to procedures outlined in Articles 22 and 23.

The determination of the Engineer shall be final upon all questions pertaining to the amount and value of extra work performed.

In making any change contemplated, the charge or credit for the change shall be determined by the Owner in one of the following methods prior to the issuance of the order for the changed work:

- (1) The order shall fix the total lump sum cost of the change in the work as mutually agreed on between the Owner and the Contractor and shall set out such cost as the amount to be added to or deducted from the contract amount by virtue of the change in the work. The cost as above shall include the Contractor's overhead and profit except that in any change which involves a net credit to the Owner, no allowance for overhead and profit shall be figured.
- (2) By estimating the number of unit quantities of each part of the work which is changed and then multiplying the estimated number of such unit quantities by the price (which price shall include the Contractor's overhead and profit) for a unit quantity thereof. Unit prices refer to unit prices bid herein. In the event there are no unit prices in the Proposal that are applicable, the Owner and the Contractor may work out a mutually agreeable unit price. The Engineer shall determine whether or not the unit prices in the Proposal are applicable to the extra work under consideration.
- (3) By ordering the Contractor to proceed with the work and to keep and present in such forms as the Owner may direct, a correct account of the cost of the change together with all vouchers therefor. The cost may include a lump sum allowance (fixed fee) for profit and overhead and 10%. The Contractor's labor costs may be increased by the cost of the various health, welfare and liability insurance he is required to carry. The Contractor's total actual cost may be increased by the cost of his Performance Bond.

In figuring changes, the instructions for measurement of quantities set forth in the Special Provisions and Specifications shall be followed insofar as possible. Items such as shovels, picks, small tools, manual equipment, melting pots, etc., shall be considered as part of the Contractor's overhead. Timekeepers, superintendents and office employees shall be considered as a part of the Contractor's overhead.

For machinery, trucks and equipment a standard rental allowance shall be charged. A reasonable rental allowance determined by the Engineer based on published rates and reasonable rental periods shall be used. If a piece of equipment used on extra work for a short period of time (hours or days) is on the job, or has previously been rented, for a long period of time (months) then the long term rental rate shall be used in determining costs.

In the case of any Extra Work ordered by the Owner and completed by a Sub-Contractor on the Project, the General Contractor will be allowed to increase the Sub-Contractor's cost to him by 5% to cover bookkeeping costs, overhead, etc. In determining costs, the Sub-Contractor is to use one of the three methods described herein above.

Article 74. Partial Payments

The Engineer shall, once in each month, make an estimate in writing of the total amount of the work done to the time of such estimate and the value thereof. The Owner shall retain ten per cent (10%) of such estimated value as part security for the fulfillment of this contract by the Contractor, and shall pay monthly to the Contractor while carrying on the work the

balance not retained as aforesaid, after deducting therefrom all previous payments and all sums to be kept or retained under the provision of this contract.

No such estimate or payment shall be required to be made when, in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the contract, or when in his judgment the total value of the work done since the last estimate amounts to less than three hundred (\$00) dollars.

The Owner may, if it deems it expedient so to do, cause estimates to be made more frequently than once in each month, and it may cause payments to be made more frequently to the Contractor. The Owner may at its option retain, temporarily or permanently, a smaller amount than as aforesaid, and may cause the Contractor to be paid, temporarily or permanently, from time to time such portions of the reserves as it deems prudent.

The Owner may also allow partial payment on such materials and/or items delivered on the site of the work but not considered as erected or complete in place (for which the ordinary payment as specified above would place) but for which, in the judgment and opinion of the Engineer, the Contractor shall be allowed a partial compensation, due to the fact that the scheduled completion of such materials and items has been hindered and delayed by either temporary closing of the project or by such other causes over which the Contractor has no control. The amount of such partial payments will be determined by the Engineer but in no case shall it exceed seventy per cent (70%) of the contract unit price.

The Owner may increase the retained percentage as security for claims or costs incurred under Articles 55, 62, 67 and 68 or any other section of the Contract.

Article 75. Acceptance and Final Payment.

The Engineer shall, as soon as practicable after the satisfactory completion of the contract, make a final estimate of the amount of work done thereunder and the value of such work, and the Owner shall, within sixty-five (65) days from and after the day the work has been approved by the Owner, forward to the Contractor a copy of the final estimate together with an agreement form for his acceptance. After such acceptance has been filed with the Owner payment of the entire sum will be made, so found to be due thereunder after deducting therefrom all previous payments and all amounts to be kept and all amounts to be retained under the provisions of the contract. All prior estimates and payments shall be subject to correction in the final estimate and payment.

SPECIAL PROVISIONS

HAMPDEN COUNTY

APPROVED

MAR 21 1956

*as to "Special Provisions"
commencing on Page 32 and
ending on Page 51.*

William F. Houghton
Thomas F. Sullivan
Calvin P. Walsh
County Commissioners



TIGHE & BOND
CONSULTING ENGINEERS
HOLYOKE, MASS.

SPECIAL PROVISIONS

Article 76. Scope of the Work. The general outline and details of the proposed work is described on a single page of plans and in a set of specifications entitled:

"PIPER RECREATIONAL DAM
PARKS & RECREATION COMMISSION
TOWN OF WEST SPRINGFIELD, MASS.

Tighe & Bond, Consulting Engineers "
Holyoke, Mass.

The work consists of the construction of all reinforced concrete outlet works and an earth dam across the neck of the valley that was formerly Piper Reservoir prior to the destruction of the downstream dam during the mid-August flood. The dam is approximately 18 feet high and 210 feet long.

Article 77. Proposal Guarantee. The bidder is required to furnish with his proposal a certified check or cash in the amount of Five Hundred Dollars (\$500.00) drawn upon a Bank or Trust Company in the Commonwealth of Massachusetts, and payable to the Town of West Springfield, Mass.

Article 78. Contract Bond. The successful bidder is to furnish to the Owner a Performance and a Labor and Material Payment Bond in the full amount (100%) of the contract for the faithful performance of all work required or labor and material furnished under this Contract.

Article 79. Insurance Requirement. In accordance with Article 44 of the General Requirements, the Contractor is to furnish the following insurance:

Public Liability	-----	\$100,000./\$200,000.
Property Damage	-----	\$25,000./ \$50,000.

The Contractor is warned to read carefully and to have his insurance company read carefully the provisions of Article 44 relating to the required insurance.

Article 80. Special Conditions. The Contractor's attention is called to the following special conditions:

1. The dam is to be substantially completed and ready to store water on Monday morning, June 4.

2. In making the award, the Owner will not only consider the unit prices and total value of the contract, but also reserves the right to consider the proposed construction time as stated in the proposal form. The Owner reserves the right to make an award to a bidder other than the lowest responsible bidder on the basis of proposed construction time. The Contractor's attention is directed to the provisions of the liquidated damages caused in the general requirements and under Article 83. of the specifications.

Article 81. Materials Furnished by the Owner. The Owner will furnish no materials to the Contractor. Also the Contractor is hereby directed and warned that he will not be allowed to use any materials from the bed of the old reservoir in construction of the new dam. All material used in the construction of the new dam is to be obtained from outside the reservoir location. Materials removed under Item 1. are to be disposed of downstream of the location of the proposed recreational dam and will be uniformly spread over the side slopes of the dry reservoir.

Article 82. Engineering Services. The Contractor will be furnished required line and grades for the construction of the conduit and outlet works, including 16" cast iron pipe. These grades will consist of line and grade stakes at 50-foot intervals along the conduit.

On the construction of the dam, the Contractor will be furnished grade stakes for the top of the dam, center line stakes and reference points at each end of the dam, and toe of slope stakes on the ground after completion of excavation. All grade stakes required for construction of the side slopes of the dam and related items will be furnished by the Contractor.

Article 83. Liquidated Damages. The Contractor's attention is directed to the provisions of Article 67. of the General Requirements of this contract. For the purposes of Article 67, completion is defined as a time when impounding of water behind the newly constructed dam is begun by closing off the 16" valve upon mutual agreement by the Contractor and the Engineer. At that time it is assumed that all work on the dam structure itself will be complete, that the intake and conduit will be complete, and that the sand facing for the upstream side of the dam will be complete. Other work required under Items 8, 13 and 14 can be completed after the closing of the 16" valve if the General Contractor so desires.

For the purposes of this contract, the sum of money referred to in Paragraph 2 of Article 67, is hereby defined by the Owner as \$50.00 per calendar day that the job remains substantially uncomplete beyond the time specified in the Contractor's proposal.

ITEM NO. 1.

EXCAVATION

Article 84A. Excavation Defined. Under the heading, Excavation, is included the work of preparing the foundation for the construction of the dam. The existing sandy soil lying on the ground surface is to be removed from under the impervious and semi-pervious sections of the dam and the clay sub-soil is to be exposed for the construction of the dam. Also, all necessary excavation to remove the sand and expose the clay under the intake works and discharge conduit are to be included under this item.

Under the intake works and discharge conduit, the sand fill is to be removed and the clay surface exposed. In the event that the clay surface is below the level of the bottom of the discharge conduit and intake works, the clay is to be raised to the required grade using impervious fill. The discharge conduit and intake works must be built upon clay or impervious fill so as to prevent seepage under the dam along the bottom of the conduit.

Article 84B. Method of Excavation. Excavation may be carried on by the Contractor using either a bulldozer, dragline or clam shell. The only limitation that the engineer will place on the Contractor's excavation methods is that they must not disturb, stir up, turn to jelly, or otherwise affect the clay sub-soil. In general, it is the Contractor's opinion that excavation could probably best be carried out using a dragline to remove the sand and then shaping up the clay sub-soil with as few passes of a bulldozer as possible. However, experience at the time of construction may indicate that a bulldozer cannot be placed on the clay sub-soil at all.

Article 84C. Disposal of Excavated Material. The excavated materials are to be disposed of on the downstream side of the dam. They are to be spread along the side slopes of the empty reservoir using a bulldozer. No further work will be required on them.

Contractor's attention is directed to the fact that the material removed under Item 1, Excavation, is not to be used in the construction of the dam. All material used under Items 2, 3, 4 and 5, in the construction of the dam, is to be obtained from borrow pits outside the reservoir area.

Article 84D. Rock Excavation. No rock excavation is anticipated in this project. For that reason, no item has been set up for such excavation. The removal and disposal of boulders and/or rock excavation is to be considered as earth excavation, Item 1, and is to be paid for as such.

Article 84E. Payment. Payment for excavation shall be made in accordance with the bid price for each cubic yard as shown in Item 1. of the Contractor's proposal. Measurement and determination of quantities will be based on the excavation, in place, prior to the start of work. The Engineer will cross-section the dam location prior to the start of work and again upon the completion of the work under Item 1. The width of excavation will be the width of the upstream third and the middle third of the dam. The unit price per cubic yard quoted under Item 1. by the Contractor shall be full payment and compensation for all work done, in accordance with Article 83A to 83E inclusive, and shall include all labor, equipment and materials required for or incidental to the completion of the excavation work as herein specified or as directed by the Engineer.

ITEMS NO. 2, 3, 4, & 5.

FILL

Article 85A. Work Included. Under these items the Contractor will furnish and place all embankment material required for or incidental to the construction of the dam.

There are four different zones in the dam, each requiring a different material. The central one-third of the dam shall consist of the most impervious material available. The downstream one-third of the dam shall consist of granular, pervious material. The upstream one-third of the dam shall consist of semi-pervious material. The upstream face of the dam shall be covered with a clean, sharp sand or fine washed gravel (grits).

Article 85B. Description of Material. Under Item 2, the Contractor shall furnish and place the impervious central core of the dam. This represents approximately one-third of the total dam cross-section. This material shall consist of selected, impervious soils consisting of a mixture of sand, gravel and clay containing not less than 30% nor more than 60% of material passing a No. 200 mesh sieve. The material shall be of a semi-cohesive nature. The native red hardpan found in most areas of West Springfield is considered ideal material for the central core of the dam providing it is at a reasonably low moisture level when placed.

Under Item 3, the Contractor shall furnish and place semi-pervious material for the upstream one-third of the dam. This material shall be the less select material obtained from the same source as material furnished under Item 2. It shall meet the same requirements for minimum particle size but may contain more sand and gravel.

Under Item 4, the Contractor shall furnish and place the pervious material for the downstream one-third of the dam. This material shall be a granular, non-cohesive, free-draining material comprised mostly of sharp sand and gravel. It shall be essentially free of clay.

Under Item 5, the Contractor shall furnish and place the two-foot thick layer of sand on the upstream face of the dam. This is to act as a protective layer for the dam itself and at the same time prevent the red hardpan from dirtying the water. This material shall consist of a clean sharp sand or fine gravel commonly called "grits". Generally speaking, a suitable material can be found "bank-run" in most gravel pits, providing material is selected that is practically free of stones.

In all cases, the material furnished shall be practically free of organic matter, roots, sod, wood and other deleterious materials. No frozen material will be accepted for placement in the dam. No stones more than 6-inches in maximum dimension are to be incorporated in the embankment and all stones exceeding this are to be disposed of along the downstream toe of the dam.

Article 85C. Description of Construction. Under Item 1, the Contractor is required to excavate all sand and unsuitable material from under the impervious and semi-pervious sections of the dam. The clay sub-soil is to be exposed in this area. Care is to be exercised not to unnecessarily disturb this existing clay sub-soil since a small amount of "working" will cause it to turn to "jelly". It is the Contractor's responsibility to prepare the surface of the clay so as to obtain a good "bond" between the sub-soil and the dam itself and to prevent seepage along this joint.

Material in the main portion of the dam is to be placed so that the top of the dam along its longitudinal axis is maintained practically level. Placement of impervious fill under Item 2 shall be kept slightly ahead of the other material so that the top of the dam shall always have a small, free-draining hump in it.

Material shall be placed in layers of not more than 8 inches measured loose and each and every area shall be compacted by at least two passes of the threads of a heavy (D-8 or equal) dozer. Trucks shall be diverted over the newly placed fill as much as possible but care is to be taken to see that they never follow each other in one set of tracks.

Material shall be placed at the most advantageous moisture level. Material too dry shall be sprinkled as required. Material too wet shall be allowed to dry before being compacted in the fill. In general, only the impervious central core of the dam will need any special moisture control. This material, when being compacted, shall contain sufficient moisture to allow it to be formed into a hard ball or to be molded with firm pressure of the fingers. It shall not contain so much moisture that the compaction process described above will result in excess water being brought to the surface of the soil.

In any areas that cannot be reached and compacted by the dozer, compaction is to be effected using a Barco tamper. All material placed in 8-inch layers is to receive at least one pass with this tamper. If pneumatic tampers are used, material is to be placed in layers not to exceed 4-inches thickness measured loose.

After a period of rain or high humidity, all muddy or loose material is to be pushed off the dam and disposed of in the downstream bed of the reservoir.

At all times care must be exercised to secure good bond between successive vertical layers of material placed and between the various horizontal layers.

Upon completion of the main structure of the dam itself and trimming of the side-slopes, the contractor may proceed with the work under Items 5. and 14.

Article 85D. Wave Control. In order to control wave action and prevent erosion of the upstream face of the dam, the Contractor will be required to place an 8"-thick layer of 2" crushed stone or washed gravel between elevation 146 and 150 on the upstream face of the dam. This stone is to replace an equal volume of sand fill and is to be paid for under Item 5.

Article 85E. Weather Conditions. Weather conditions will control the placement of embankment material to a great extent.

No frozen material is to be incorporated in the embankment. This applies equally to material hauled onto the job in a frozen condition and to material already in the embankment that becomes frozen.

All material incorporated in the embankment is to be at its optimum moisture level and material not meeting this requirement will not be used on the job. Any material already in place that becomes soft, muddy or saturated due to rain or flooding is to be removed from the embankment.

The Contractor's attention is directed to the fact that payment is to be made under the fill items based on measurement of the material in place in the completed work. All material removed due to its frozen or wet condition will be at the Contractor's expense.

Article 85F. Payment. The Contractor will be paid at the applicable unit price specified in his Proposal for each cubic yard of fill, furnished, placed and compacted in the dam. Fill will be measured in place in the completed work by cross-sectioning the dam foundation after completion of work under Item 1. and upon completion of work under Items 2, 3, and 4.

It is understood that the Contractor's unit prices under the fill items include all labor, equipment and materials required to obtain the fill, plan and spread the fill, compact the fill and to do any other incidental work.

ITEM NO. 6.

CONCRETE

Article 86A. Work Included. The Contractor shall furnish and place all concrete required for the completion of the contract. This is to include concrete for the encasement of the discharge conduit, the concrete for the intake works, and all other concrete required for or incidental to the work.

Article 86B. Materials. The concrete used on this job shall show a compressive strength at 28 days of 3,000 lbs. per square inch. The concrete shall contain not more than six gallons of water per bag of cement, including the water content of the aggregate. The concrete shall have a slump range of from 2" to 4". Concrete shall be made up using aggregate not larger than 3/4".

It shall be the Contractor's responsibility to secure or design a mix of suitable proportions and with the required strength and slump.

All concrete used on this job for the headwalls shall be purchased from a transit mix company in the Metropolitan Springfield area, having an experience at this work of at least five years. Concrete mixed on the job with machines will be acceptable for the base of the manhole and the catch basin. No hand mixed concrete is to be used on the job.

Article 86C. Placing of Concrete. Concrete is to be placed in clean forms that have been previously wetted. The concrete shall be thoroughly rodded in order to secure adequate compaction and prevent the formation of rat holes. Aggregate shall be placed in dry weather and no concrete shall be placed under water. Concrete placed in freezing weather shall be made with heated materials and shall be properly protected with admixtures and heated shelters.

Forms are to be securely braced and tied together so as to maintain correct alignment and not bulge when the concrete is placed. The bonds are to be held in place by an acceptable type of form tie which will break off behind the face of the concrete so as to leave no scar in the surface of the concrete.

Article 86D. Protection and Curing. The Contractor shall protect the concrete from damage by rain, snow, frost or underground water during and after placing and until properly cured and hardened. The manner of protection shall be subject to the approval of the Engineer. Concrete shall be kept fully saturated and protected against drying action by an approved method of curing for not less than seven (7) days.

Article 86E. Measurement. Concrete masonry will be measured in place by the cubic yard and the quantities determined in accordance with the dimensions as shown on the plans, and such alterations of the plans as are specifically ordered in writing by the Engineer. In cases where the quality of the work is not as specified or in cases where the dimensions are not as specified, the Engineer may order the removal of the work and its replacement with satisfactory work. If the Engineer deems it expedient and advisable, he may accept such unsatisfactory work, but shall make such an adjustment in the quantity unit price as he shall determine.

Article 86F. Payment. Concrete masonry will be paid for under Item 6. of the specifications. The Contractor's unit price shall include the forms, furnishing and placing of all material, and all labor not otherwise herein provided and that may be necessary to execute the work properly in accordance with the intent of these plans and specifications.

ITEM NO. 7.

REINFORCING STEEL

Article 87A. Work Included. Under this item the Contractor shall furnish in place all reinforcing steel required for the job. In general, reinforcing steel is required in the outlet conduit encasement and in the concrete inlet works.

Article 87B. Type of Steel. Reinforcing Steel shall be new billet stock of intermediate grade manufactured in accordance with the latest A.S.T.M. specifications, allowing high bond design values. Steel furnished shall be suitable for a tensile designed strength of 20,000 lbs. per square inch, with the usual factors of safety.

The bars shall be furnished free of scale, oil and structural defects, when delivered to the job, and shall be stored at the job site in such a way as to maintain them in good condition, free of rust and other deleterious matter.

Article 87C. Placement. Steel shall be placed in the forms in the exact position and with the spacing shown on the drawings or ordered by the Engineer. It shall be so fastened in position as to prevent being displaced during the placing of concrete.

Article 87D. Payment. The Contractor will be paid at the unit price specified in his proposal for each pound of reinforcing steel furnished in place in the completed work. In computing the weight of the bars to be paid for, the theoretical weight and actual length used in the work will be the basis of payment. Wire or metal clips, seats and other supports necessary to hold the steel in place are not to be considered as a part of the reinforcing, and no extra compensation will be given the Contractor for them. The Contractor's unit price under this item is to include all labor, equipment and materials required for or incidental to the item.

All necessary work in the field, in order to fit the reinforcing around various openings and recesses, shall not be considered as extra work and will not be paid for as extra work.

ITEM NO. 8.

STRUCTURAL STEEL

Article 88A. Work Included. Under this item the Contractor shall furnish in place all structural steel required for the job. In general, the only structural steel required is at the top of the inlet works and consists of a grating with supporting angle irons and the guard bars on the side weirs. The work under this item shall include all labor, equipment and materials required for or incidental to the placing of the structural steel.

Article 88B. Material. The materials used under this item are to be as follows:

- (a) Pipe Sleeves. The pipe sleeves are to be 1½" galvanized wrought iron sleeves.
- (b) Weir Guards. The ¾" round guards on the weirs are to be made up of cold rolled steel, threaded one end, and shall be furnished with two nuts on that end.
- (c) Grating Support. The 5 x 3 x 3/8" angle used to support the grating is to be a standard hot rolled structural steel angle iron.
- (d) Grating. The grating used on the top of the inlet works is to be Irving Type AA, with bearing bars having a depth of 2" or approved equal. A suitable device for fastening down the grating to the bearing angle is to be provided. Gratings to be furnished in sections weighing not more than 100 lbs.
- (e) Anchor Bolts. The bearing angles are to be anchored to the concrete with an L-shaped, ¾" anchor bolt, cast into the concrete at each of the four corners of the inlet structure. The supporting angle itself is to be removable by simply loosening up the nuts on the four anchor bolts.

Article 88C. Painting. All structural steel furnished and placed on the job is to be given three coats of paint. One coat is to be shop applied red lead or a combination of red lead and iron oxide. The second coat is to be a gray metal primer. The third coat is to be the finish coat and is to be sage green.

Article 88D. Payment. The Contractor will be paid at the unit price specified in his proposal for each pound of structural steel furnished in place in the completed work in accordance with these specifications. In computing the weight of structural steel furnished, the actual dimensions and the theoretical weight of the steel will be used. The Contractor's unit price under this item is to include all labor, equipment and materials required for or incidental to the item. This is especially to include the installation of the various items of iron work and their painting in accordance with these specifications.

Any necessary work in the field in order to fit the grating or other structural steel work to the various openings and recesses shall not be considered as extra work and shall not be paid for as extra work.

ITEM NO. 9.

CAST IRON

Article 89A. Work Included. Work under this item shall include the furnishing and placing of all cast iron required for the job. In general, the only cast iron required is the manhole steps on the inside of the inlet structure.

Article 89B. Material. Material is to be gray cast iron. The castings are to be sound, true to form and shape, and free from all blow-holes and other defects. The castings shall be sharp and perfect and boldly filleted at all angles and arrises.

Manhole steps shall be cast iron as manufactured by the Flockhart Foundry Company, Type I, or C. M. White #104, or Fleming Foundry Company, Metcalf-Eddy pattern, and weighing approximately 10 lbs. each.

Castings are to be furnished on the job properly sealed and given one shop coat of a bituminous paint.

Article 89C. Payment. Payment shall be made to the Contractor at the unit price specified in his proposal for the number of pounds of cast iron furnished in place in the completed work in accordance with these specifications. The weight used in computing payment under this item is to be the actual weight of the materials furnished. The Contractor's unit price under this item shall include all labor, equipment and material required for or incidental to the work.

ITEMS NO. 10. & 11.

PIPE

Article 90A. Work Included. The work under Item 10. shall include the furnishing and placing of the 60" reinforced concrete discharge conduit. The concrete encasement of this conduit is to be furnished and placed under Item 6.

The work included under Item 11. shall be the furnishing and placing of 16" cast iron pipe and specials.

Under both Item 10. and 11. the work shall include the furnishing and placing of the materials, including jointing and all other labor, equipment and materials required for or incidental to the work.

Article 90B. Pipe Materials. The pipe furnished under Item 10. is to be 60" reinforced concrete, standard strength, culvert pipe, made in accordance with A.S.T.M. specification C-76-52 Table I.

The pipe furnished under Item 11. is to be 16" cast iron pipe having a wall thickness equal to or heavier than Class 100 pipe manufactured in accordance with Federal Specification WWP-421, or approved equal. The special to be furnished under this item is to be a flanged to bell adapter piece, Class D or better, with an American Standard 125 lb. flange. Cast iron pipe and special to be furnished coated inside and outside.

Article 90C. Jointed Material. The 60" reinforced concrete pipe may be laid either with dry joints or with cement mortar or jute in the joint. However, regardless of how the Contractor lays the 60" pipe, some provision must be made to maintain proper alignment of the various pieces of pipe and to prevent the intrusion of mortar into the pipe when the concrete encasement is poured. Therefore, the Contractor is advised to lay this pipe with either jute in the joints or with cement mortar in the joints. Upon completion of the encasement work, the joints on the inside of the pipe are to be filled with mortar so as to present a neat appearance and a smooth flow line.

The bell and spigot joint between the 16" cast iron pipe and the 16" flange to bell adapter is to be made up with lead. The spigot is to be centered in the bell using jute pounded home carefully and leaving at least a 2½" depth of joint for the lead. The lead is to be poured into place in accordance with normal water works practice and upon cooling it is to be caulked.

The flanged joint between the valve and the bell and flange adapter piece is to be made up with bolts and a composition gasket in accordance with standard practice. Upon completion of assembly, the bolts are to be painted with a metallic or bituminous paint.

Article 90D. Pipe Laying. In laying the 60" pipe, the Contractor is to take care to make sure that the bottom of the pipe encasement is poured in contact with either the natural clay sub-soil or with impervious fill placed and compacted to bring the clay sub-soil to the required grade. Care must be taken to see that there is no danger of seepage along the bottom of the encasement. The Contractor may exercise his option as to whether to pour the base of the encasement and place the 60" concrete pipe thereon or whether to place the 60" concrete pipe and pour the entire encasement in one step. However, the former practice will generally produce the desired results in the most economical manner.

The 16" cast iron pipe is to be laid on either undisturbed clay sub-soil or on thoroughly compacted semi-pervious material. In either case, care must be taken to thoroughly compact the material under and around the pipe so as to adequately support it and protect it from damage.

All pipe is to be laid true to line and grade and care shall be taken to secure closeness of joints, true alignment and smoothness and continuity of invert. All joints are to be made up in the dry and under conditions where dirt and water cannot in any way injure the partially completed joint.

Article 90E. Payment. Payment will be made for pipe furnished in place in the completed work at the unit price specified in the Contractor's proposal for the applicable item. Measurement will be made in the field upon completion of work and the contractor will be paid for the actual number of feet of pipe so measured. In the case of the concrete pipe, measurement will be made from the base of the groove in the upstream pipe to the end of the tongue in the downstream pipe. In the case of the cast iron pipe, measurement will be made from the face of the flange in the adapter piece to the base of the bell in the upstream end.

The unit prices in the Contractor's proposal shall be considered to include the complete cost of furnishing and laying the pipe as hereinbefore described, including jointing and all other labor, equipment and materials required for or incidental to the work.

ITEM NO. 12.

DRAWDOWN VALVE

Article 91A. Work Included. Under this item the Contractor is to furnish and install the 16" drawdown valve, complete with extension stem and required stem braces.

Article 91B. Materials. The materials under this item are to be as follows:

(a) Valve.

The valve is to be a 16" flanged, low-pressure, double-disc, bronze mounted gate valve, similar or equal to Chapman List 58½.

The valve is to be fitted with a cold rolled, extension stem, securely fastened to the valve and equipped to be nut operated at its upper end. The operating nut on the extension stem shall be at approximately elevation 146.75.

The invert of the gate is to be approximately 136.00.

The required extension stem guide braces are to be attached to the concrete with cast-in, L-shaped, anchor bolts. Cinch type anchor bolts will not be approved.

Article 91C. Payment. The Contractor will be paid the lump sum specified in his proposal for the 16" drawdown valve and extension stem furnished in place in the completed work, in accordance with these specifications. The Contractor's lump sum under Item 12. is to include all labor, equipment and materials required for or incidental to the work.

ITEM NO. 13.

FENCE GATE

Article 92A. Work Included. Under this item, the Contractor is to cut into the fence on the Amostown Road end of the dam and is to install a double leaf gate having a clear opening of at least 16 feet. The gate shall be the same height and made of the same material as the existing fence. The purpose of this gate is to provide a method of direct access to the construction site, since the Contractor will not be allowed to remove the pine trees on the northerly end of the construction site in the WaterDepartment yard.

Article 92B. Materials. The fence gate installed shall match the existing fence in every respect possible. The fabric on the gate is to be woven wire and galvanized. The gate posts installed are to be adequately sized, securely attached to the existing top rail, and diagonally braced to either a concrete thrust block placed in the ground or to the next lying post back along the fence. The gates themselves shall each be approximately 8 feet wide and shall be capable of swinging a full 180 degrees.

A suitable locking device shall be installed with the gate.

All posts disturbed during the construction and all new line or corner posts installed are to be set in concrete. Also, a concrete block shall be set at the middle of the gate for the locking device.

Article 92C. Payment. The Contractor is to be paid the lump sum specified in his Proposal for the new fence gate, complete in place, including all labor, equipment and materials required for or incidental to the work.

ITEM NO. 14.

LOAMING AND SEEDING

Article 93A. Work Included. Under this item the Contractor is to construct a grassed area across the top portion of the dam and on the downstream face of the dam as directed by the Engineer. In general, it is intended to cover the entire top slope and downstream face of the dam with a protective cover of grass to prevent erosion from rainstorms.

Article 93B. Construction. After the top and side slopes of the dam have been properly graded to the line and grades shown on the plans, the entire area will be covered with approximately 6 inches of loam. Thus the top of the dam shows to be at Grade 150 and this represents the top grade of the structure itself. On top of this will be placed approximately 6 inches of loam which will bring the finished grade of the top of the dam to elevation 150.5.

The loam used on this job is to be a good grade, black, natural soil containing a reaonsable amount of humus. The loam shall not contain excessive amounts of either sand or clay. After spreading and fine-grading the loam, the Contractor will be expected to fertilize and seed it as hereinafter described.

Fertilizer shall consist of a chemical 5-10-5 fertilizer or better, and shall be applied at the rate of 100 lbs. per 3,000 square feet. The fertilizer shall be lightly raked into the surface of the loam and shall be left there for at least one week before any seed is applied.

Seed meeting the hereinafter described analysis shall be applied at the rate of 100 lbs. per 20,000 square feet. Prior to the placing of any seed, the Contractor shall lightly rake the surface of the soil to break up any caked or hardened areas and to level off any eroded areas. The seed used on this job shall be composed of the following mixture:

Orchard Grass	30% or less
Domestic Rye Grass	20% or less
Red or Cured Fescue	20% or more
Blue Grass	20% or more
Other Perennial Grasses	8%
Inert Material, Weeds and Other Matter	2% or less

After spreading the seed, the Contractor shall lightly rake the surface again and shall roll it with a light roller as required. The Contractor may top mulch or otherwise protect the newly seeded areas as required, and at his discretion. The Contractor shall maintain the areas seeded until all work is complete and accepted. Maintenance shall consist of providing protection against traffic and erosion and watering as necessary. Damaged areas and areas of unsatisfactory growth shall be repaired and reseeded as necessary at no additional cost to the Owner.

Article 93C. Payment. The Contractor will be paid at the unit price specified in the Proposal for each square yard of loaming, fertilizing and seeding furnished in place, in accordance with these specifications. The area to be treated will be as specified by the Engineer but will generally cover the top and downstream face of the dam.

FINAL CLEAN-UP

Article 94. General. On completion of the work to be done under this contract, and before final acceptance of the work, the Contractor shall clean up the job so that the condition of the site in every instance will be at least equal to its condition prior to the start of the work.

Dust shall always be controlled by wetting down or by the use of calcium chloride.

The Contractor shall be extremely careful in the conducting of his work to be certain that his work is always neat and clean, compact and workmanlike in operation.

MAINTENANCE OF DAM

CONSTRUCTED

UNDER THIS CONTRACT

Article 95A. General. During the life of this Contract and for one year following the acceptance of the work and the payment of final payment to the Contractor on all of the work, the Contractor shall be responsible for and maintain the dam as constructed under this contract, and shall correct any defects which may appear before final acceptance of the job by the Owner and also during this one year guarantee period. The one year guarantee period shall begin for each and every and all items of the work on the day that the entire project is accepted and final payment prepared for the Contractor on the work.

Article 95B. Basis of Payment. No item is set up for compensating the Contractor for this work, to be done under the requirements of this article, and he is to include the cost of the doing of this work in the various items on his Proposal.

ALTERNATE TO ITEM 10.

60" LOCK JOINT PIPE

Article 96A. Work Included. Under this item the Contractor is to furnish and place 60" reinforced concrete pressure pipe. The purpose of this item is to eliminate the necessity of the concrete encasement on the 60" concrete culvert pipe. If pipe is used under this alternate item, the pipe will be laid without any encasement and with only seepage rings constructed of concrete furnished and placed under the applicable item. If ground conditions warrant, the Engineer reserves the right to order the placement of a reinforced concrete cradle for the lock joint pipe, but at present it is assumed that the use of the cradle will not be necessary.

Article 96B. Materials. Materials to be furnished and placed under this alternate item is to be any type of reinforced concrete cylinder pipe having a rubber and steel, pressure type joint. In general, the lock joint S.P.3, S.P.5 or S.P.12 pipe is acceptable providing it is reinforced sufficiently to withstand a soil of 15 feet of heavy material over the top of the pipe.

Article 96C. Construction. Construction is to be as previously described for Item 10. In the event that a concrete cradle is not used under this alternate item, the pipe is to be carefully laid in a shaped soil so as to be supported on undisturbed material for at least the lowest 90-degree arc of the pipeline. Soil is to be carefully placed around the pipe and hand tamped so as to assure complete support for the pipe and to prevent seepage along the line of pipe.

Seepage rings as shown in the plans are to be constructed at not less than 3 locations as directed by the Engineer. These rings are to be poured against the pipe after the pipe has been placed. The forms are then to be stripped and selected soil is to be placed and compacted against the pipe and the seepage rings.

Article 96D. Payment. The Contractor will be paid for each lineal foot of 60" reinforced concrete pressure pipe furnished and placed in the completed work as herein specified. The pipe will be measured in place from the face of the inlet structure to the downstream end of the pipeline.

Excavation, reinforcing steel, concrete and other materials are to be paid for under the applicable item. The Engineer reserves the right to order the use of a concrete cradle with this alternate pipe item, If he deems ground conditions to be such as to require its use. However, in general, it is anticipated that the only concrete to be placed in connection with this alternate pipe item is the concrete for the seepage or cut-off rings.

MINIMUM WAGE RATES

CONCRETE AND EARTH DAM

Chapt. 461 of
the Acts of 1935PROJECT: Local - Parks & Recreation
Commission

TOWN: West Springfield

RATE PER HOUR

Hoisting Engineer	\$2.85
Assistant Engineer:	
On Steam Machines	2.25
On Other Machines	1.75
Crane Operator	2.85
Power Shovel Operator	2.85
Trenching Machine Operator....	2.85
Tractor Operator	2.40
Bulldozer Operator	2.40
Grader Operator	2.40
Compressor Operator:	
220 cu. ft. or less	1.85
Over 220 cu. ft.	2.30
Jack Hammer Operator	1.75
Roller Operator	2.32½
Concrete Mixer Operator	
1 Bag	1.75
2 Bags or less	2.30
Pumpman	2.30
Other Power Driven Equipment,..	2.32½
Bricklayer	3.12½
Cement Finisher	3.12½
Stone Cutter	2.25
Stone Mason	3.12½

RATE PER HOUR

Mason Tender	\$2.00
Catch Basin & Manhole Builder	3.12½
Carpenter	2.77½
	<u>after 6/1/56</u> ... 2.82½
Pile Driver & Cofferdam Builder	2.75
Iron Worker	3.38
	<u>after 7/1/56</u> ... 3.53
Painter	2.55
Blaster	1.87½
Truck Driver	2.09½
	<u>after 5/1/56</u> ... 2.19½
Euclid Operator	2.35
	<u>after 5/1/56</u> ... 2.45
Pipe Layer	1.75
Stone Spreader	1.75
Asphalt Raker	1.75
Curb Setter	2.50
Common Laborer	1.75
Water Boy75
Electrician	3.05
Granite Cutter	3.08
Operator of 3 axle Equipment	2.15
	<u>after 5/1/56</u> ... 2.25

CONTRACT



**TIGHE & BOND
CONSULTING ENGINEERS
HOLYOKE, MASS.**

C O N T R A C T

Clause 1. This Agreement, made this _____ day of _____ in the year nineteen hundred and fifty _____, between the

_____ herein referred to as the "Owner", and _____

_____ herein referred to as the "Contractor".

Clause 2. Witnesseth, That the parties to this Agreement, each in consideration of the agreements on the part of the other herein contained, do hereby agree, the Owner, for itself, and said Contractor for himself/themselves and his/their heirs, executors, administrators and assigns, as follows:

The Contractor agrees to furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished and delivered in and about the improvement and to do and perform all work in: _____

_____ in strict conformity with the provisions herein contained and the Advertisement for Bidders and Proposal hereto annexed, and the General Requirements and Special Provisions hereto annexed, and with the plans referred to therein. All said plans, general requirements, special provisions, addenda,

Advertisement for Bidders, and Proposal are hereby specifically made a part of this contract as fully and to the same effect as if the same had been set forth at length herein.

Clause 3. In consideration of the foregoing premises the Owner agrees to pay and the Contractor agrees to receive as full compensation for everything furnished and done by the Contractor under this contract; including all work required but not shown on the plans for the items herein mentioned, and for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any delay or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work as herein specified, and for well and faithfully completing the work, and the whole thereof, as herein provided, such price or prices as are set out in the accompanying proposal, and for

all work required, for which there is no item in the proposal, such compensation as is provided for in the aforesaid specifications.

IN WITNESS WHEREOF, the Owner has caused this instrument to be signed and its corporate seal to be hereto affixed in its behalf, and the Contractor has caused this instrument to be signed in its behalf.

For the Owner,

Witness:

_____)
_____)
_____)
_____)
_____)

By the _____

(_____
(_____
(_____
(_____

For the Contractor,

Witness:

By the _____

GEORGE H. McDONNELL
PHILIP W. SHERIDAN
EDWARD J. BAYON

TIGHE & BOND

CONSULTING ENGINEERS

CIVIL, SANITARY AND ELECTRICAL ENGINEERING
INVESTIGATIONS, REPORTS, PLANS AND SPECIFICATIONS
SUPERVISION OF CONSTRUCTION AND OPERATION

BOWERS AND PEQUOT STREETS
HOLYOKE, MASSACHUSETTS
TEL. JEFFERSON 3-3991

CD W. Springfield
Aug. 15, 1962

Thomas F. Sullivan, County Commissioner
27 Calvin Street
Springfield, Massachusetts

Dear Sir:

In accordance with your request that I investigate a problem at the property of Mr. Morando, situated at 112 Amostown Road in West Springfield, I met with Mr. Morando on Tuesday morning, Aug. 14, and discussed the matter with him. Mr. Morando owns property at the intersection of Amostown Road and Piper Road, in West Springfield. The outlet from old Piper Reservoir extends under Piper Road, and passes thru property of Mr. Morando in a natural gulley formed by the flowing water. This brook formed gulley has been in existence for many, many years.

Piper Road crosses the brook valley or gulley, so-called, on a fill and under this fill the brook flows in a concrete culvert 5 ft. in diameter.

Mr. Morando wishes to make use of his property on which the brook valley is located and would fill the valley, if the culvert could be extended about 150 ft. downstream and if surface water from Piper Road could be controlled so as not to run over and wash out any fill that he might place on his land.

Mr. Morando states that at time of heavy storm runoff, the roadway on Piper Road becomes flooded and on occasion, the surface runoff will pond deep enough to flow onto his property, down the bank of the road fill and into the brook. There are catchbasins located in each gutter of the roadway but they apparently are not adequate for the quantity of water channeled to this area or the grates become plugged with debris so that the water cannot enter.

The problem of handling surface water on Piper Road could be improved

West Springfield Water Department Dam No. 1 - Black Brook Dam No 2 & Darby Brook Reservoir Dam



1926 West Springfield

Black Brook Dam located upstream from pumping station or Bear Hole Reservoir Dam located on Black Brook - Dam No 2 is located on Darby Brook.

City/Town	West Springfield
City/Town	West Springfield
Dam	Darby Brook Reservoir Dam
Dam	Black Brook Dam
Dam	West Springfield Water Department Dam No. 1 - Black Brook and Dam No 2 Darby Brook Reservoir Dam
Dam	Bear Hole Reservoir Dam
Water	Darby Brook

West Springfield Water Works,
West Springfield, Mass.

you are notified that your second
dam upstream from the pumping station or Bear Hole reservoir dam,
located on Black Brook so called in the Town of West
Springfield, etc.

"There is some erosion of the
rock ledge at the toe of the spillway,
which, if it keeps increasing, it might
be advisable to lay a concrete apron
along the toe of the spillway."

Very Truly,
Yours,

March 24, 1926

West Springfield Water Works,
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your Darby Brook Reservoir dam, located on Darby Brook so-called in West Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

"At a point about seventy feet south from the north end of the dam, there seems to be some seepage on the downstream side of the structure. As the seepage, however, is at a point in elevation very little below the surface of the reservoir, it is not very material. Outside of this, the dam seems to be a water tight structure."

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

March 24, 1926

West Springfield Water Works,
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your second dam upstream from the pumping station or Bear Hole reservoir dam, located on Black Brook so-called in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following recommendations made by him;

"There is some erosion of the rock ledge at the toe of the spillway, which, if it keeps increasing, it might be advisable to lay a concrete apron along the toe of the spillway."

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

May 17, 1933

West Springfield Water Dept.,
Town Hall,
West Springfield, Mass.

Dam # 1

Gentlemen:

In accordance with the provisions of Section 45 of Chapter 253 of the General Laws as amended by Chapter 334 of the Acts of 1923 and as further amended by Chapter 178 of the Acts of 1924 relative to the inspection, condition and safety of the dams of Hampden County, you are notified that your dam (middle dam) located on Black Brook, in the Town of West Springfield, has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

"If the dam is to be maintained it should be repaired, especially the downstream wall which is being undermined by erosion of the ledge on which it is built. This erosion should be checked by a concrete apron or otherwise, and the wall pointed and put in good condition. If the dam is not going to be maintained the pond formed thereby should be drawn down and emptied."

Now, therefore, in accordance with Section 46 of said Chapter 253, it is ordered that the above recommendations be complied with in a reasonable length of time.

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman.

Paucatuck Brook Dam



1951 West Springfield

Dam located on Paucatuck Brook about two-thirds of a mile downstream from Ashley Pond.

Abutters	West Springfield Water
City/Town	West Springfield
Dam	Paucatuck Brook Dam
Water	Paucatuck Brook
Water	Ashley Pond

July 25, 1951

Board of Water Commissioners
Town of West Springfield
Town Hall
West Springfield, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby advised that your dam located on Paucatuck Brook, about two-thirds of a mile downstream from Ashley Pond, has been recently inspected by our Engineer, and your attention is called to the following conditions noted and recommendations made by him:

"This dam is becoming delapidated and a washout around the easterly end might occur during extreme overflow conditions. The dam should also be cleared of brush."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Very truly yours,

COUNTY COMMISSIONERS

By William F. Stapleton
Chairman

Thomas F. Sullivan

Francis M. O'Keefe - Acting County
Commissioner

TIGHE & BOND copy

189 High Street,
Holyoke, Mass.

October 24, 1951

The Hon Board of County Commissioners
Hampden County Court House
Springfield, Mass.

Attention: William F. Stapleton,
Chairman

Re: Communication from
West Springfield Water Dept.

Gentlemen:-

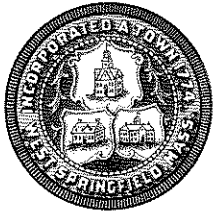
The Superintendent of the West Springfield Water Department met with the undersigned to discuss the repairs needed at the Department's small dam located in the Town of West Springfield, just southerly of the Holyoke city line and Ashley Reservoir.

The repairs recommended at the West Springfield Water Department's dam are somewhat minor in nature, however, necessary to prevent a washout around the dam should extreme runoff conditions occur.

Since the pond behind the dam is small and shallow, and since the soil around the ends of the dam is extremely well compacted and in its natural state, it would seem that repairs to the structure could be delayed until early Spring of 1952.

Respectfully submitted,

G. H. MCDONNELL
County Hydraulic Engineer



TOWN OF
WEST SPRINGFIELD MASSACHUSETTS
OFFICE OF
WATER DEPARTMENT

TOWN HALL BUILDING
126 PARK STREET

October 17, 1951

County Commissioners,
37 Elm Street,
Springfield 3, Mass.

Attention: Mr. William F. Stapleton,
Chairman.

Gentlemen:

The Board of Water Commissioners wish to acknowledge receipt of your letter of July 25th relative to the condition and safety of their dam located on Paucatuck Brook.

Wish to advise that they are desirous of maintaining this dam but owing to the lack of funds in their current years budget they will be unable to make the repairs at this time. They are, therefore, requesting if it will be agreeable to your Committee that these repairs be made early in the Spring of the year 1952 in accordance to the plan which has been submitted to you, and which we believe meets with your approval.

Very truly yours,

BOARD OF WATER COMMISSIONERS

HRB/APM

Harry R. Babb
Clerk of the Board.

Copy of this letter sent to G.H. McDonnell, County Hydraulic Engineer, on October 18, 1951.

Worthy Dam



1940 West Springfield

Located on Westfield River.

City/Town	West Springfield
Dam	Worthy Dam
Name	Worthy Paper Company Association
Water	Westfield River

RETURN RECEIPT

*Received from the Postmaster the Registered or Insured
number of which appears on the face of this Card.*

(Signature or name of addressee)

[Handwritten Signature]

(Signature of addressee's agent)

Date of delivery, _____, 193

Form 3811

U. S. GOVERNMENT PRINTING OFFICE

Post Office Department

OFFICIAL BUSINESS

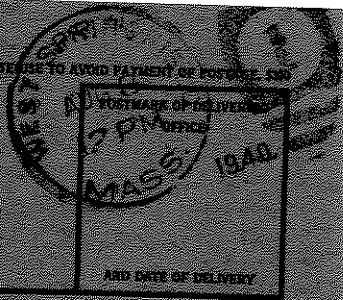
REGISTERED ARTICLE

No. 14354

INSURED PARCEL

No. _____

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, 100



Return to Chas. J. Cummings

(NAME OF SENDER)

Street and Number, }
or Post Office Box, }

SPRINGFIELD,

MASS.

August 7, 1940

Worthy Paper Co.
1 Walnut St.
No. Agawam, Mass.

Gentlemen:

In accordance with the provisions of Chapter 253, Section 45 et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby notified that your dam on Westfield River in Agawam has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him;

"This timber structure is in need of considerable repairs, as the crest is sagged at different places especially towards its east end, thus showing that the timbers beneath are becoming disintegrated."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____
Chairman

August 14, 1940

Richard K. Hale, Director,
Division of Waterways,
Department of Public Works,
100 Nashua Street, Boston, Mass.

Dear General Hale:

Enclosed find copy of a letter received from Mr. Gorham Bliss of the Worthy Paper Company Association, West Springfield, Mass.

The County Commissioners would appreciate your investigating this matter and giving us all the information possible. We, of course, are very much interested in helping every manufacturer in this County.

Trusting that you will give this your immediate attention and hoping that something may be done to relieve this condition at the Worthy Paper Company, we are

Very truly yours,

COUNTY COMMISSIONERS

By _____ Chairman.

CWB/N
Encl.

August 14, 1940

Mr. Gorham Bliss,
Worthy Paper Company Association,
West Springfield, Massachusetts.

Dear Sir:

Your letter of August 8th in reference
to the silt deposit below your dam, received.

The County Commissioners have agreed
this day to take this matter up with General Hale
who has charge of waterways in the Department of
Public Works, and will advise you as soon as we re-
ceive information from him in regard to what can be
done in removing the obstruction in the river.

Very truly yours,

COUNTY COMMISSIONERS

By _____ Chairman.

CWB/N

August 21, 1940

Mr. Gorham Bliss,
Worthy Paper Company Association,
West Springfield, Massachusetts.

Dear Sir:

Referring to our letter of August
14th, we have received a reply from General Hale
and enclose herewith copy of his letter which is
self-explanatory.

Very truly yours,

COUNTY COMMISSIONERS

By _____ Chairman.

cwb/n
encl.

*Worthy Paper
Association*

Wednesday
Sept. 8, 1943

Mr. Tighe came in and reported on the dam of the Northy Paper Co, in regard to their letter dated Aug. 26, 1943.

Mr. Tighe saw Mr. Robert Ley & both agreed it will be a big expense to open the gates - the gates are all sealed up with concrete. The weak spot to be fixed is on the West Spfld side of the river.

The Commr is instructed Mr. Tighe to see Selectman Teece of N. S., to have the Town of West Spfld write a letter to open the gates.

September 2, 1942

Worthy Paper Company
1 Walnut Street
North Agawam, Mass.

Gentlemen:

We are enclosing for your information a copy of a letter addressed to Mr. Alfred Leeds, administrator of the Estate of Morgan Worthy, deceased. This letter relates to the condition of the dam owned by this Estate and located on the Westfield River in the town of Agawam.

Yours very truly,

COUNTY COMMISSIONERS

By _____ Chairman

September 23, 1942

Worthy Paper Company,
1 Walnut Street,
North Agawam, Mass.

Dear Sirs:

Mr. Alfred Leeds, administrator
of the Estate of Morgan Worthy, came in to inform
the County Commissioners that he is no longer
interested in the dam at the Worthy Paper Company.

Under the statutes, if a dam is
not repaired, the water must be let out.

We assume that you will take what-
ever action is necessary.

Anticipating an early reply, we
remain

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman.

TJC/N

September 26, 1942

Gorham Bliss, President,
Worthy Paper Company Association,
West Springfield, Mass.

Dear Sir:

In reply to your letter of
September 25th, the County Commissioners would
like to have you come in to our meeting next
Wednesday, September 30th, at 11 A.M., to dis-
cuss the matter of the dam owned by the Worthy
Estate.

Very truly yours,

COUNTY COMMISSIONERS

By _____ Chairman.

September 2, 1942

William V. Baldwin, Esq.
Maple Street
North Wilbraham, Mass.

Dear Sir:

We are enclosing for your information a copy of a letter addressed to Mr. Alfred Leeds, administrator of the Estate of Morgan Worthy, deceased. This letter relates to the condition of the dam owned by this Estate and located on the Westfield River in the town of Agawam.

Yours very truly,

COUNTY COMMISSIONERS

By _____ Chairman

September 2, 1942

Mr. Alfred Leeds, Administrator
Morgan Worthy Estate
27 Ridgewood Terrace
Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45 et. seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition and safety of the dams of Hampden County, you are hereby notified that the Worthy Estate dam on the Westfield River in Agewam has been inspected by our engineer and your attention is called to the following conditions noted and recommendations made by him:

"In August of 1940, the County Commissioners called attention of the Worthy Paper Company to the need for repairs on this timber dam. These repairs have not been made, however, and as it appears that this dam is a part of the Estate of Morgan Worthy, deceased, and that there may be some question as to responsibility for maintenance of the structure, it is recommended that the County notify Mr. Alfred Leeds, administrator of the Estate of the need for such repairs, and that a copy of this notification be sent to William V. Baldwin, attorney for the Estate, and to the Worthy Paper Company."

Any further information concerning this matter which you may desire will be furnished by this office upon request.

Yours very truly,

COUNTY COMMISSIONERS

By _____ Chairman

May 19, 1943

Gorham Bliss, President,
Worthy Paper Company Association,
West Springfield, Massachusetts.

Dear Sir:

This will acknowledge receipt of
your letter of May 18, 1943 and in reply we wish
to state that we have turned the matter over to
our Engineer to investigate and make a report for
our next meeting on May 26th.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman.

C/N

Worthy Paper Company Association

WEST SPRINGFIELD, MASSACHUSETTS

May 18, 1943.

Mr. Thomas J. Costello,
Office of the County Commissioners
Hampden County Court House
Springfield, Mass.

Dear Mr. Costello:

You will probably recall a conversation with the Board of Commissioners that I had some months ago regarding the dam here at the mill. We agreed to repair the section under discussion as soon as the water would be low enough to permit us to safely do so.

In this connection, with the more or less controlled flow of the river at the present time, we can't say just when the river will be at its lowest level. It would be of great assistance to us to have the gates on the West Springfield side of the river opened, because that is the spot where the water in the pond is deepest.

Since meeting the Commissioners, the Town of Agawam took over the dam from the Worthy Estate under tax title. I don't know whether the Town of West Springfield took half the dam and the Town of Agawam the other half, or just what did happen. It would be of great help to us, however, if you would instruct both the Town of West Springfield and the Town of Agawam to open the gates whenever we requested it; and with that cooperation we would be able to repair the dam at the most favorable time -- both from the standpoint of our manufacture and the height of water in the river. As you well know, today we are all under a terrific pressure in our manufacturing schedules, so that cooperation all along the line is most helpful. We have not approached either the Town of Agawam or the Town of West Springfield about opening the gates, but we feel the request would be more official if it came from the County Commissioners, in view of the fact that you are insisting on the repair to the dam, which we do not own.

Cordially yours,

WORTHY PAPER CO. ASSN.



Gorham Bliss,
President.

May 26, 1943

Board of Selectmen,
Town of Agawam,
Mass.

Dear Sirs:

We enclose herewith copy of a letter received from the Worthy Paper Company in regard to the dam at the mill.

The County Commissioners would be pleased to have your Board attend a conference next Wednesday, June 2nd, at 11 A.M. in the Commissioners' office, Court House, with the Selectmen of West Springfield, to discuss the matter of this dam.

Very truly yours,

COUNTY COMMISSIONERS

By _____ Chairman.

g/N

May 26, 1943

Board of Selectmen,
Town of West Springfield,
Mass.

Dear Sirs:

We enclose herewith copy of a
letter received from the Worthy Paper Company
in regard to the dam at the mill.

The County Commissioners would
be pleased to have your Board attend a conference
next Wednesday, June 2nd, at 11 A.M. in the
Commissioners' office, Court House, with the
Selectmen of Agawam, to discuss the matter of
this dam.

Very truly yours,

COUNTY COMMISSIONERS

By _____
Chairman.

C/N

September 1, 1943

Mr. James L. Tighe,
Hydraulic Engineer,
189 High Street,
Holyoke, Mass.

Dear Mr. Tighe:

Enclosed herewith is copy of a
letter received from the Worthy Paper Company Asso-
ciation. The Commissioners would like to have you
look into the matter and talk with Mr. Ley and make
recommendations to the Commissioners.

Very truly yours,

COUNTY COMMISSIONERS

By _____ Chairman.

TJC/N
Encl.

Y M C A Dam (Young Men's Christian Association Dam)



1958 West Springfield

Dam located on YMCA property on Paucatuck Brook, down stream from Bear Hole Dam.

City/Town	West Springfield
Dam	Bear Hole Dam
Dam	Y M C A Dam
Name	Young Men's Christian Association
Water	Paucatuck Brook

Dec. 31, 1958

Mr. Wallace Wyman, Town Engineer
Y.M.C.A. Representative
Town Office
West Springfield, Mass.

Dear Sir:

In accordance with the provisions of Chapter 253, Section 45, et seq. of the General Laws, Tercentenary Edition, relative to the inspection, condition, and safety of the dams of Hampden County, you are hereby advised that the dam located on Y.M.C.A. property on Paucatuck Brook in the Town of West Springfield has been recently inspected by our Engineer and your attention is called to the following conditions noted and recommendations made by him.

"This dam is located upon Paucatuck Brook at a point downstream from the Bear Hole Dam of the West Springfield Water Works. At the location of the dam in question, the drainage area is approximately 6 square miles. Consequently, any dam to be constructed across the brook at this point would come under County jurisdiction and would require plans and specifications of the dam to be filed with and approved by your Board.

The dam now existing at the site is an earth embankment varying from 6 ft. to 8 ft. in height and approximately 70 ft. in length. The top width is about 10 ft. and the side slopes of the embankment are rather steep. An insignificant spillway tube is formed with a concrete pipe placed thru the dam. This tube can provide a fraction of the needed spillway capacity at this site. The dam is so built that excess flows can either pass around the dam to the west or pass over the structure and do damage to the embankment.

If the dam is to remain and is to be acceptable within the requirements of the law, the structure should be redesigned and rebuilt with proper spillway construction and capacity to provide ample overflow to meet the peak rates of runoff from the drainage area involved. "

Chapter 253 of the General Laws, particularly Sections 44 thru 50 have to do with the control of dams in the various counties of the Commonwealth. Section 44 states that a reservoir, reservoir dam or mill dam shall not be constructed or materially altered until plans and specifications of the proposed work have been filed with and approved by the County Commissioners of the County where it is situated. The rules and regulations generally apply to dams on streams where the drainage area exceeds one square mile, where the height of the dam will be 10 ft. or more, or where the volume of water stored is to be 1,000,000 gallons or more. Any one of these three factors result in a dam coming under County jurisdiction.

Since your dam is on a stream having 6 miles of drainage area, the dam should have a spillway capable of passing the full flow of the 6 square mile drainage area without endangering the dam itself.

Any further information concerning this matter which you may desire will be furnished by this office upon request. The County Hydraulic Engineer, George McDonnell, of Holyoke, Mass., may be reached at JE 3-3991 for any further information or any engineering conference you wish to have on this matter.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS



End of Book D22 ~ Dams ~ West Springfield